

THE KEYSTONE



THE
ORGAN
OF THE
JEWELRY
&
OPTICAL
TRADES



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Vol. 23

January, 1902

No. 1

THE WORLD'S WATCH WORD IS ELGIN



**More than
9,000,000**

ELGIN WATCHES Regulate the Hours

of business and travel the world over. These watches were sold by dealers who measure the possibilities of business by their stock of Elgins. Every Elgin Watch is fully guaranteed by the factory. See Jobbers' List for prices—or write to the company. Every dealer is invited to send for a copy of the free art booklet, "Timemakers and Timekeepers."

ELGIN NATIONAL WATCH COMPANY,

Factories, ELGIN, Illinois, U. S. A.
General Offices, 76 Monroe St., CHICAGO.

NEW YORK OFFICE, 11 John Street.
SAN FRANCISCO, 206 Kearney Street.

F&B. **Theodore W. Foster & Bro. Co.** 

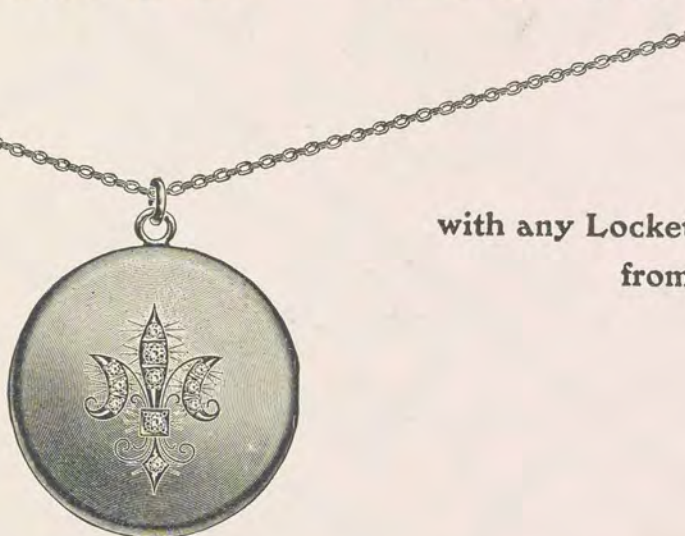
Successors to FOSTER & BAILEY

Makers of FINE GOLD FILLED JEWELRY

NECK CHAINS AND LOCKETS

A good variety
of PRINCESS CHAINS

with any Locket you may select
from our extensive line

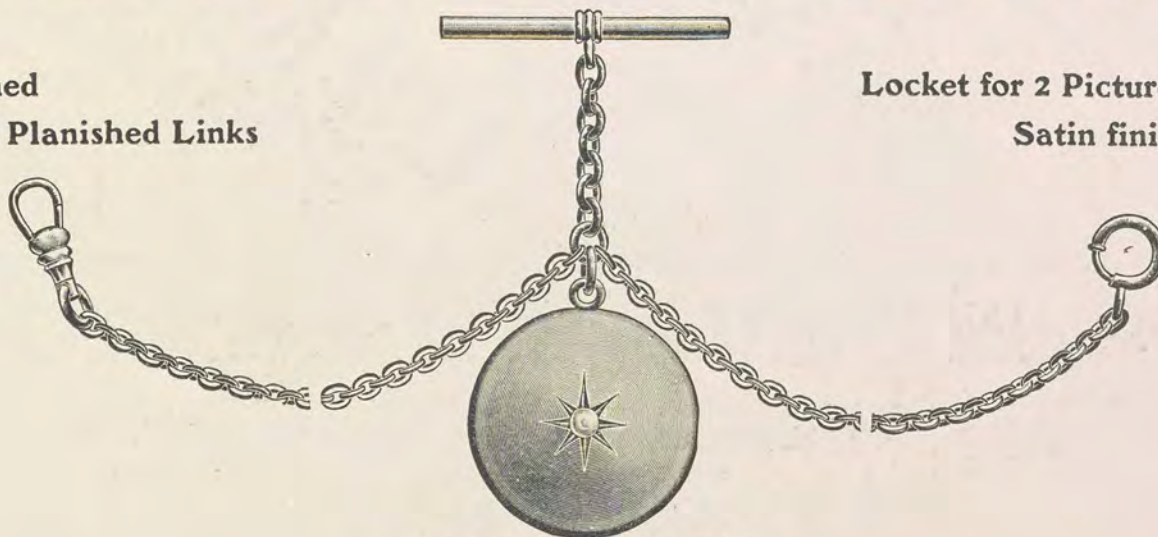


119/1892

VEST CHAINS AND LOCKETS

Chain is Polished
with Planished Links

Locket for 2 Pictures
Satin finished. Opal set.



1373 CHAIN. 1871 LOCKET.

We have the best assortment of all kinds of CHAINS and LOCKETS to be seen in the market. We have also large and beautiful lines of BRACELETS, PINS, CUFF BUTTONS, EARRINGS and HAIR CHAIN MOUNTINGS.

Remember that all goods bearing the **F&B** trade-mark are made to WEAR 10 YEARS and are so guaranteed by us.

Our **STERLING SILVER TOILET, MANICURE** and **DESK SETS** are always necessary for display in your stocks, and the steel parts in them are made to use, not simply to look at.

MANUFACTURING JEWELERS and SILVERSMITHS

100 Richmond Street, **Providence, R. I.**

HEADQUARTERS

CR Mainsprings
American and Swiss
SOLE AGENTS 48 YEARS

Jurgensen Recoiling Mainsprings
Fine Swiss Olive Hole Jewels
Separate Size Holes and Diameters

Our SPECIALTIES
Fine Swiss Jurgensen Pinions
Swiss Stem=Winding Material of All Kinds
Large Assortment of Hands Suitable for Fine Swiss Watches
(ORDERS FILLED FROM ANY CATALOGUE)
MAIL ORDERS attended to promptly

L.H. KELLER & CO.
Fine Watch Material, Tools, Files, Supplies
64 Nassau Street
NEW YORK

ANNOUNCEMENT OF TELL A. BEGUELIN

To the Trade: Having gone out of business, I take pleasure to inform you that I have accepted a position with the old-established firm of **L. H. KELLER & CO., 64 Nassau Street, New York**, where I will be pleased to receive your orders, and I will see that your orders are filled as well as they were when I was doing business in my own name, as I will give them my personal attention. Thanking you for past favors and hoping you will give your patronage to L. H. Keller & Co., I remain

Yours truly,

TELL A. BEGUELIN.

We also wish to inform the trade that **Mr. EMILE DREYER**, who for the past twenty-eight years has been connected with Tell A. Beguelin, is now in our employ, and will be pleased to give his personal attention to the orders of his many friends who have been dealing with him at the old house.

L. H. KELLER & CO.

Importers, Manufacturers and Jobbers of
Fine Watch Materials, Tools, Files, Supplies and Optical Goods

64 Nassau Street, NEW YORK



MAIL ORDERS FILLED SAME DAY AS RECEIVED

C
H
A
I
N
S

WATCHES

THE NEW YEAR, 1902

finds us with an excellent assortment of new patterns in Watches and Chains. We are therefore in good shape to fill up the much-depleted stocks of the **Retail Trade**.

In Movements we have :

**Elgin
Waltham
Hamilton**

In Cases :

**Gold
Filled
Silver
Nickel**

In reliable makes

In Chains we make a specialty in the celebrated R. F. Simmons Co.'s :

**Gents' Vests
Pony Vests
Dickens Vests**

**Ladies' Guards
Secret Locket Chains
Bracelets**

Give us a trial.

THE NON-RETAILING COMPANY

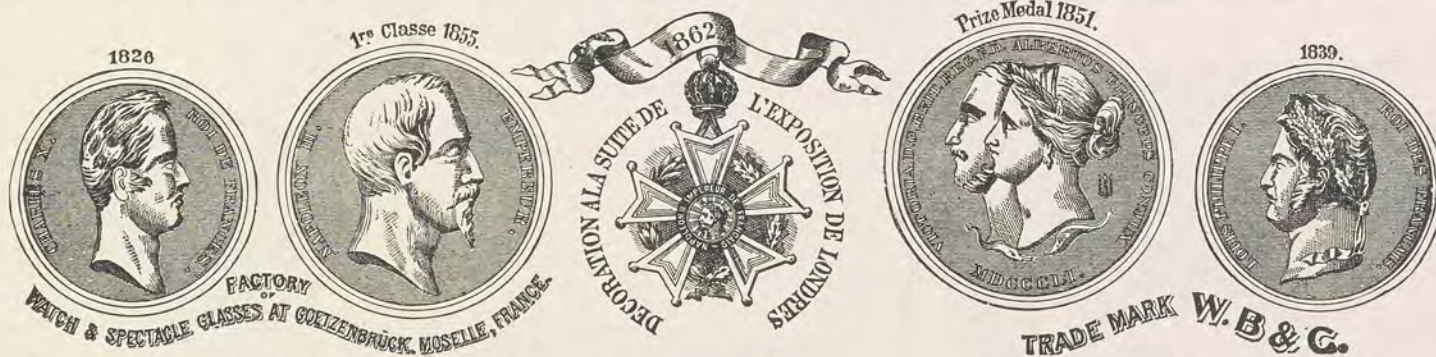
Jobbers in WATCHES AND CHAINS

LANCASTER, PA.

WATCHES

C
H
A
I
N
S

Over 25 Silver and Gold Medals awarded to the **W B & C** Glasses at the Different Exhibitions of the World



The only Medal at the World's Fair for Watch Glasses was awarded to the **W B & C** brand



WATCH GLASSES

The **W B & C** Glasses

are known to be the **BEST**



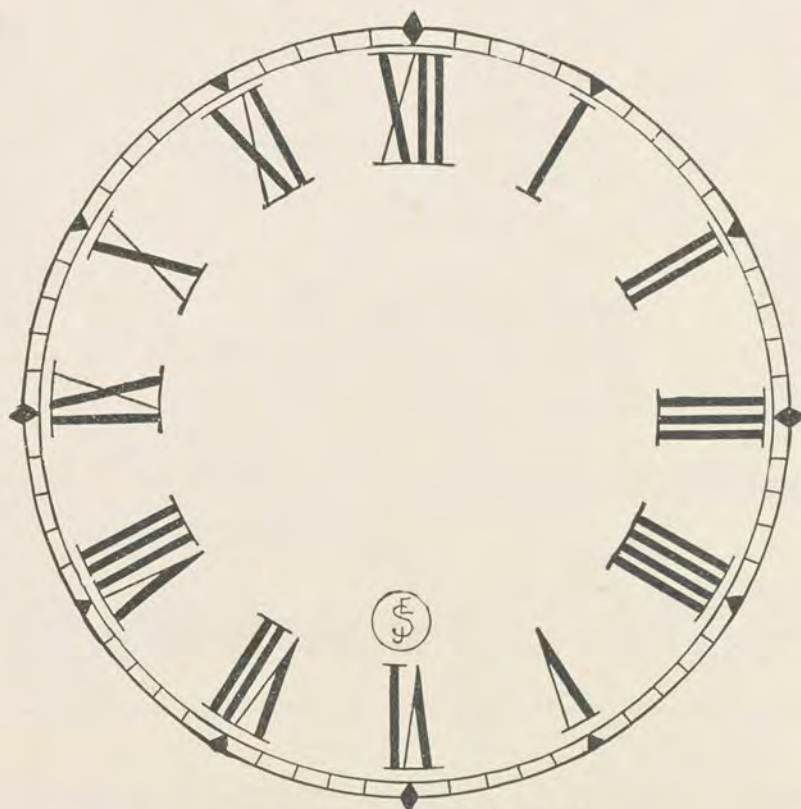
Everybody knows that the **W B & C** glasses **HAVE BEEN, ARE, AND WILL ALWAYS BE** the leading brand of glasses in the market. Their finish, clearness, flexibility and correctness of size make them so that the leading jobbers in the United States will use no others at any price. Four-fifths of the case manufacturers are using them on account of their accuracy and perfect roundness. They used to buy a cheaper grade of goods, but soon found out the wisdom of the old proverb, "The Best is the Cheapest at the End."

WATCHMAKERS!! If you wish to save time and money and give good satisfaction to your customers (if you are not using them), try the **W B & C** and don't be deceived by bluffing and humbugging advertisements, showing a lot of nonsensical figures. The **W B & C** glasses are in existence over sixty years, and during that time a great many brands have sprung up in one day, and never heard from afterwards.

It is a good and reliable glass you want, which is the **W B & C**

FOR THE NEW YEAR

We suggest that if you are not already on our books as a customer you give us a trial order and allow us to demonstrate how complete we fill it and what care we use to send only what is ordered. No order is too small to receive careful attention, and none so large but that we can fill it promptly.



4-inch Gummed Paper Dial.

Gummed Paper Clock Dials

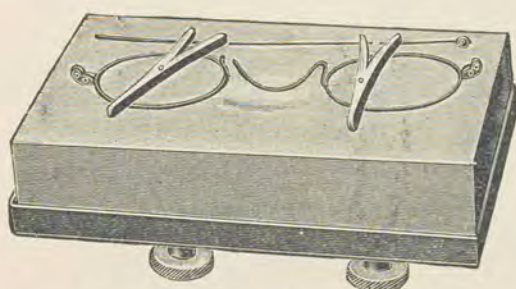
are more popular than ever, and each day adds to the number of jewelers that use them. As will be seen by the list of sizes given below, nearly every style of Dial can be renewed with a neat, clean Dial at a trifling expense. Note that we now have Calendar Dials in 10 and 12-inch size, and Second Bits by which Dials for Lever Clocks can be replaced. All jobbers carry these Dials in stock.

SIZES AND PRICES.

Size.	Per doz.	Size.	Per doz.
2-inch	\$.25	6-inch	\$.90
3 " "	.40	6 1/2 " "	1.10
3 1/2 " "	.40	7 " "	1.10
3 3/4 " "	.45	8 " "	1.25
4 " "	.45	9 " "	1.35
4 1/2 " "	.50	10 " "	1.50
4 3/4 " "	.50	11 " "	1.75
5 " "	.60	12 " "	2.25
5 1/2 " "	.60	10 " Calendar	2.25
5 3/4 " "	.75	12 " "	2.25
6 " "	.75	1 1/2 " Second Bits	.10
6 1/2 " "	.85	2 " " "	.10
6 3/4 " "	.90		

1 dozen, assorted, 3 to 10-inch, 75 cents.

Price includes two keyhole washers with each dial.



Wightman Soldering Block.

A practical soldering clamp that is ready for use at a moment's notice. There are no screws to adjust, arms to tighten nor parts to rust and wear out. For soldering Bezels, Joints on Cases, Settings, Rings, Spectacle Frames, Spectacle Temples, Chains, etc., there is no clamp made that approaches it for simplicity and quick adjustment. The charcoal is chemically prepared and will not burn or split.

Price, each, \$1.00
" by mail, 1.15

Ask for
**Our Illustrated
Tool,
Material
and
Optical
Catalogue**

525
pages
full of
interesting
prices.

Send your business card
with request and a copy will
be sent free of charge.



Spectacle Lens Washers.

When a lens is a trifle small for the frame these washers are just the thing to tighten it, and do it in a neat way that does not make a bungling job. They are furnished in three sizes, assorted in package. Try a sample package and see how often you can make use of them.

Price per package of 3 dozen, 15 cents.

WE HAVE COMPETENT MATERIAL MEN

to select orders for small watch material. Send to us when in need of small parts that must be correctly matched, or when you need material that must be right when you receive it.

E. & J. SWIGART, Cincinnati, Ohio



LONG FACES

are the result of disappointment. If you would avoid disappointment in your returns for old gold and silver, also for sweeps, send your consignments to us. Thousands of Jewelers would not think of sending their consignments elsewhere. Why should you? Experience has taught them they get full valuation and quick

returns. Why not let their experience guide you and save you money?

CHEER UP

and forward your next shipment of sweeps or old gold and silver to us and become one of our army of

SATISFIED CUSTOMERS.

PRICES WE PAY.

OLD SILVER, market price.
Platinum, market price.

OLD GOLD,

8 karat, 32 cts. per dwt.
10 karat, 40 cts. per dwt.
12 karat, 48 cts. per dwt.
14 karat, 56 cts. per dwt.
18 karat, 72 cts. per dwt.

PLATED SCRAPS,

20 to 35 cts. per oz.

Highest
Prices
Always.

Prompt
Returns.



Returns for Sweepings within 3 to 5 days of receipt.

GOLDSMITH BROS.,

Sweep Smelters, Refiners and Assayers,

63-65 Washington Street, CHICAGO.

Works: 5826 Throop Street.

HUGH LYONS & CO. LANSING, MICH.

Trained Intelligence Plus Skilled Handicraft

SHOW CASES, COUNTERS, WALL and FLOOR CASES, MIRRORS, GLASS SHELVES and other Display Fixtures made in our factory are all designed to meet your special requirements as regards convenience, adaptability and up-to-dateness.

Back of this is substantial worth in all materials and in every detail of the making.

You are not only assured of distinctly modern designs, but are guaranteed lasting satisfaction when you buy from the "Largest and Best Equipped Fixtures Factory in the World."

WRITE FOR OUR CATALOG

Chicago Salesroom:

238 E. Madison St.

New York Salesroom:

679 Broadway.

L. L. CLINE ADV. DEPT.

GREEN'S European Hotel

Eighth & Chestnut Sts., PHILADELPHIA, PA.



Centrally located in the very heart of the business district, near Post Office and all principal Theaters.

THE TRAVELING SALESMAN'S
FAVORITE PHILADELPHIA HOTEL.

255 Rooms,
FROM \$1.00 TO \$1.50 PER DAY
for ladies and gentlemen

MAHLON W. NEWTON,
PROPRIETOR.

All Modern Conveniences. A Thorough Up-to-Date Hotel.

The "Jap" Wants Your Work



ELKS' BUTTON
(Front) Pat'd

Sterling Silver and Gold-Plated



ELKS' BUTTON
(Side) Pat'd

Sterling Silver and Gold-Plated



TIGER CLAW RING
Solid Gold Pat'd

These are two of my latest designs, which you will find are attractive goods and quick sellers. I would be pleased to submit designs and estimates on new work for the trade. Workmanship the very best, and satisfaction guaranteed.

Ikko Matsumoto,

Rooms 1, 2 and 3, 17½ S. Meridian St.

Manufacturing Jeweler
Indianapolis, Ind.



TRADE-MARK

THE RICKETTS CHAMOIS NOVELTY CO.

Largest Oil Tan Chamois Manufacturers in the World,

JOHNSTOWN, N. Y.

Established 1900

Through our "New Mail Order Department," we offer you **Warranted Oil Tanned Chamois WATCH BAGS**, all sizes, from 00 to 20, inclusive, at **\$1.25** per gross. Put up in any assortment of sizes desired. All our goods are neatly sewed on French overstitch machines.

The same bags neatly printed, at **\$1.50** per gross. Add **10c.** (ten cents) per gross extra for orders to be mailed, and always send remittance with order.



The

CARDINAL POINTS

of the



Watchmakers' Jewelers' and Engravers' Supply Business are:



No. 10. Improved Solid Oak, Walnut or Cherry, Highly French Polished Roll-Top Benches. Guaranteed. PRICE, ONLY

\$16.25 NET CASH.



No. 11. Improved Solid Oak, Walnut or Cherry, Highly French Polished Plain-Top Benches. Guaranteed. PRICE, ONLY

\$9.50 NET CASH.



The "Imperial" Silver Polish

has no equal for

Cleaning and Polishing Gold, Silver, Plated and Britannia ware, Aluminum, Nickel, Tin, Copper, Brass, Zinc, Mirrors, Windows, Bicycles, Statuary, Marble, etc., or any other material where a brilliant lustre is required.

144 half-pint bottles with your own name and address on the lithographic labels, instead of ours, to enable you to advertise yourself, and not the manufacturer,

for **\$16.00**

We guarantee that it will do the work, so do not hesitate to place your order.

The "Pederson" Guaranteed Demagnetizer

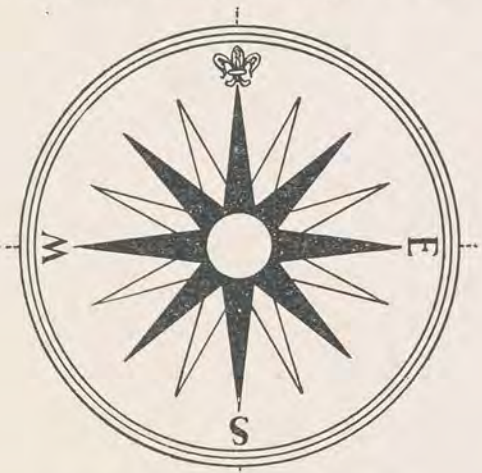
For Alternating Current Only Full directions with each instrument. In ordering, be sure to state the exact voltage and the make of incandescent lamp used.



The "Imperial" Revolving and Adjustable Back Chairs for Opticians and Watchmakers.

No. 8000. Solid Oak, Cane Seat, \$4.50
No. 8002. Solid Oak, Saddle Seat, 5.25
No. 8004. Upholstered in Solid Leather, 7.00

Accurate and Rapid Filling of Orders.



Unlimited Stock.

Best Grade of Goods.

Right Prices.

With us prompt service is possible by reason of a large and complete stock and perfect organization. We have everything needed for manufacturing and repairing, in addition to an ample assortment of each particular article, and a large staff of practical, competent employees to execute orders.

We handle nothing but the best. Inferior goods have no place in our stock. We are too jealous of our reputation to jeopardize it by selling an unsatisfactory article.

We do not, however, overlook the importance of right prices. Quality for quality, we are glad to have our prices compared with any.

We illustrate here a few of our leading lines, chief among which are the celebrated "Imperial" Mainsprings.

These comprise only a part of the wide range of goods we carry. Always remember that we have the best of everything in our line, for instant delivery, and at right prices.

OUR NEWLY-REFITTED SALESROOMS—AMONG THE FINEST IN NEW YORK CITY

We have recently doubled our floor space to take care of our rapidly increasing business and to provide facilities for filling orders with the utmost promptness and accuracy. All goods are so classified and arranged that they can be selected in the shortest possible time. Every department is thoroughly systematized. Mail orders are our specialty.

We are always pleased to welcome out-of-town visitors, and we invite them to make use of the conveniences of our establishment when in New York City.

During the coming year we shall try our utmost more firmly to cement our relations with business friends of many years' standing, and to establish new connections with those who are not at present our customers.

W. GREEN & Co., Successors to Green Bros.,

6 Maiden Lane, New York City.

Importers, Exporters, Manufacturers and Jobbers of Fine Grade Watch Materials, Tools, Optical Goods, Jewelers' and Engravers' Supplies.

Manufacturers of the celebrated



Registered Trade Mark and Facsimile of Wrapper on the Imperial American Mainsprings

The Imperial Mainsprings are guaranteed for one year. Each Spring bears the word "IMPERIAL."

Each Spring is tagged with the Name and Size: for FINISH, TEMPER, ELASTICITY and DURABILITY they have no equal.

Price, **\$12.00** per gross
1.00 per dozen

WATCH SIGNS

Made of zinc, the only material that has proved itself durable for outdoor use, carefully finished—the best paint only used—gilded with XXXX 22 K. pure gold leaf.

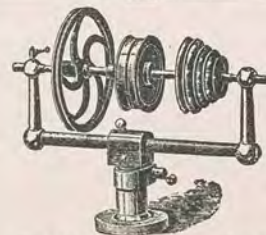


PLAIN.

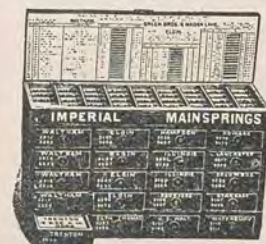
No.	9 inch diameter,	Price.
937.	12 "	\$3.40
937A.	12 "	3.82
937B.	14 "	4.67
937C.	16 "	5.52
937D.	18 "	6.37
937E.	20 "	7.22
937F.	22 "	8.50
937G.	24 "	9.77
937H.	26 "	10.62
937I.	28 "	11.90
937J.	30 "	13.60
937K.	36 "	18.70

FLANGE.

No.	12 inch diameter,	Price.
940.	12 "	5.10
940A.	15 1/2 "	6.37
940B.	17 1/2 "	7.65
940C.	20 1/2 "	8.50
940D.	22 1/2 "	10.20
940E.	25 "	11.90
940F.	27 "	13.60
940G.	30 "	15.30
940H.	32 "	20.40
940I.	35 "	23.20
940J.	37 "	27.20
940K.	44 "	38.25



Extra Quality Improved Full Nickel-Plated Speed Counter-shaft. Price, \$3.50



IMPORTANT NOTICE

With a first order of one gross of the "Imperial" American or Swiss Mainsprings we send CABINET GRATIS and 36 screw-top bottles, also directory of springs and perforated gum labels for drawers.

The Cabinet itself is worth \$6.00 and is far superior in appearance than is represented by the cut.

Fac-Simile of an assortment of "Imperial" American and Swiss Mainsprings coiled and tagged.



None Genuine unless marked "Imperial" and bearing our Registered Trade-Mark.

WENDELL AND COMPANY. No. 38000
GOLD AND SILVER SMELTERS AND REFINERS. \$123*
 CHICAGO, ILLS. Dec 2 1901
 OFFICE AND WORKS NO. 37 WASHINGTON STREET
 Pay to the order of Jas. W. Shepherd \$123 50
 One hundred twenty-three 50/100 DOLLARS.
 To FIRST NATIONAL BANK, CHICAGO. Wendell Co.

When You Receive One of Our Drafts

the amount will represent the actual cash value of the Old Gold and Silver consigned to us. We can give it because

We are NOT in the Refining Business Exclusively

Our large business requires complete smelting, refining and assaying departments. We handle without additional expense and use in our own factories all Old Gold and Silver consigned to us.

The difference in the value of old gold (before refining) and new gold (after refining) is our profit, which is much smaller than it would have to be if we conducted a separate refining business with expenses and refining costs ranging from 15 to 20 per cent. of the value of the old metal received.

WE REMIT THE SAME DAY

consignments are received, by bank draft (on which there is no exchange to pay).

Consignments Returned Express Prepaid

in exactly the same condition received if the amount is not up to your expectation.

WE PAY FOR OLD GOLD

24c. per dwt. for 6-karat	36c. per dwt. for 9-karat	48c. per dwt. for 12-karat	60c. per dwt. for 15-karat
28c. " " " 7 "	40c. " " " 10 "	52c. " " " 13 "	64c. " " " 16 "
32c. " " " 8 "	44c. " " " 11 "	56c. " " " 14 "	68c. " " " 17 "
			72c. " " " 18 "

Highest market value paid for OLD SILVER

Polishings, Crucibles, Bench and Floor Sweeps economically handled and proceeds promptly remitted

Don't Pay Your Bills with Old Gold or Silver

Sell it to us for full cash value and pay your bills with the returns. You will save much by so doing. Most of the firms that take gold and silver on account do not use it themselves; nor have they any means of ascertaining its exact value, but depend on others, who place a value on it that will afford two profits.

Wendell & Company

Smelters, Refiners and Assayers

93, 95 and 97 William Street
NEW YORK

Established 20 years

57 Washington Street
CHICAGO

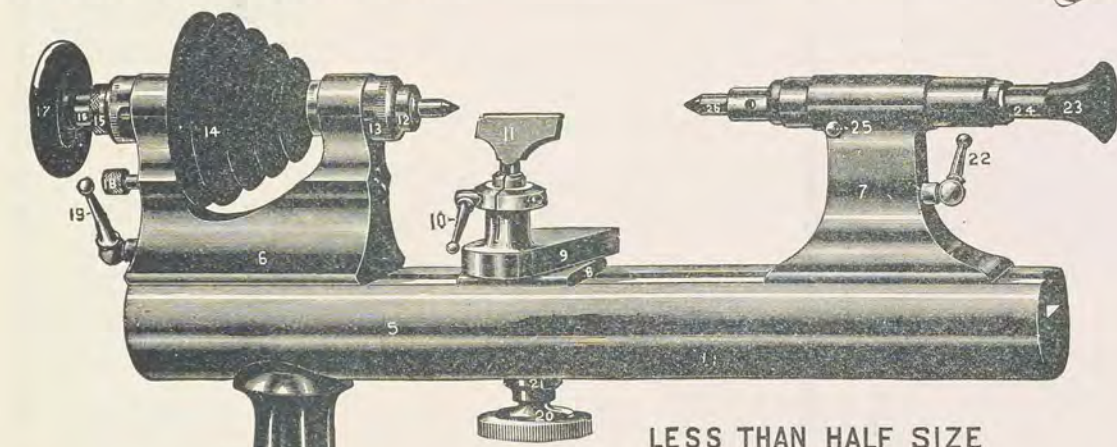
WENDELL AND COMPANY. No. 12000
GOLD AND SILVER SMELTERS AND REFINERS. \$62*
 NEW YORK, Oct. 14th 1901.
 OFFICE AND WORKS 93, 95 & 97 WILLIAM STREET
 Pay to the order of Lawrence and Colby \$62 37
 Sixty two 37/100 DOLLARS.
 To THE NATIONAL PARK BANK, NEW YORK. Wendell Co.

WE WISH YOU A HAPPY PROSPEROUS NEW YEAR

and we no doubt can make it more prosperous for you, and at the same time make you happier by offering you the best goods made, for the least money they have ever been offered. It does not require any introduction to **BOLEY** goods. They are the best and everyone knows it. It is an old saying—**If you want tools buy BOLEY'S.** Many of our customers have been compelled to buy inferior goods because they could get them cheaper, but if you take advantage of our offer you will no longer have this excuse.

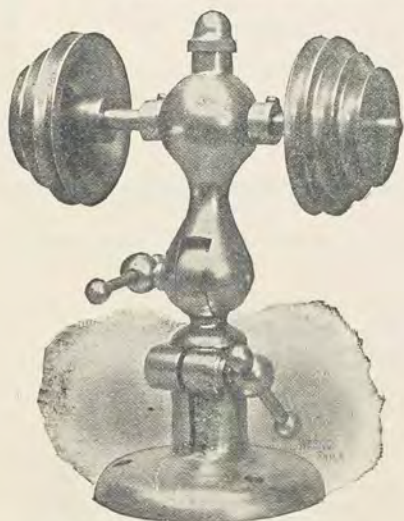
These are Genuine Boley Goods, and cannot be duplicated at these prices.

You save at least 25 per cent.

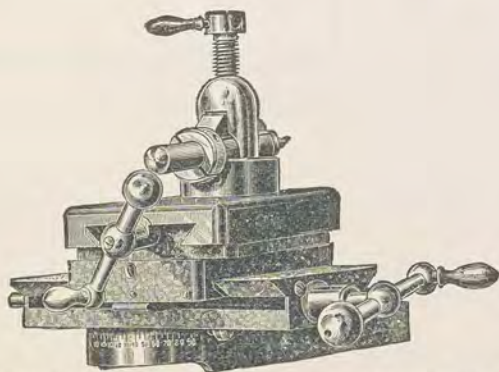


LESS THAN HALF SIZE

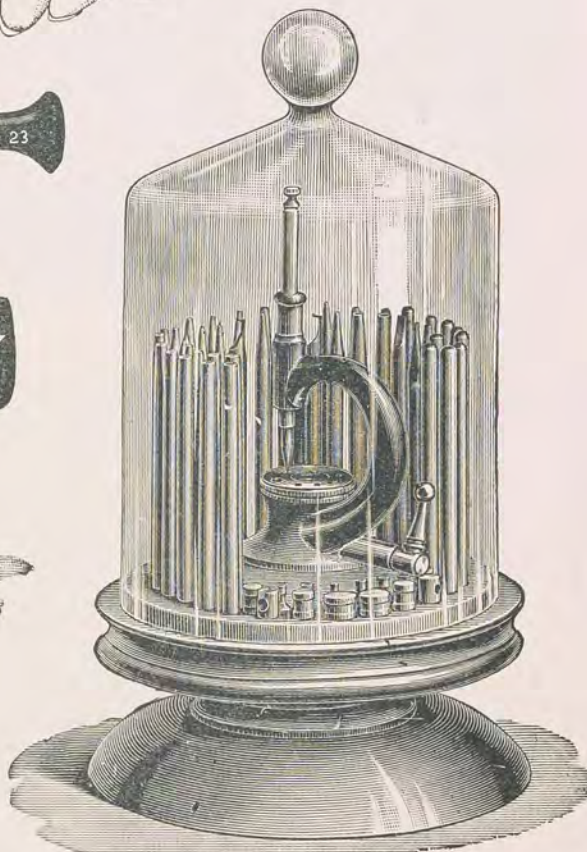
Webster-Whitcomb, or Moseley No. 2 pattern, with 10 chucks, taper centers, chuck block and cover, and belting \$19.75 net.



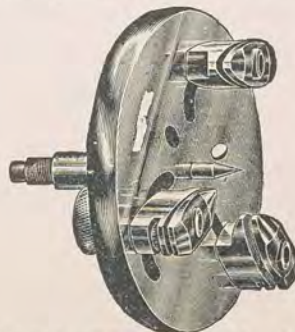
Adjustable, finely nicked and finished. The finest countershaft on the market. \$2.98 net.



Slide Rest for Webster-Whitcomb or Moseley No. 2 Lathe. Perfection in every respect. An indispensable tool, \$10.49 net.



50 Punch, 14 Stumps and Punch Remover, \$4.98 net.
60 Punch, 14 Stumps and Punch Remover, \$5.98 net.
Made to our special order.



Face Plate for Webster-Whitcomb or Moseley No. 2. Absolutely guaranteed \$5.98 net.

M. SICKLES & SONS

Dealers in everything for the Trade

726 Chestnut St., PHILADELPHIA

Take Advantage of the Present General Prosperity by always keeping a good variety of

The "Bryant" Rings.

They best meet the the general desire for something good and handsome at a price that affords the RETAILER a good profit.



Our Trade

Mark guarantees

QUALITY,
STYLE and
FINISH.

We have enjoyed the favor of people of taste and refinement for more than fifty years.

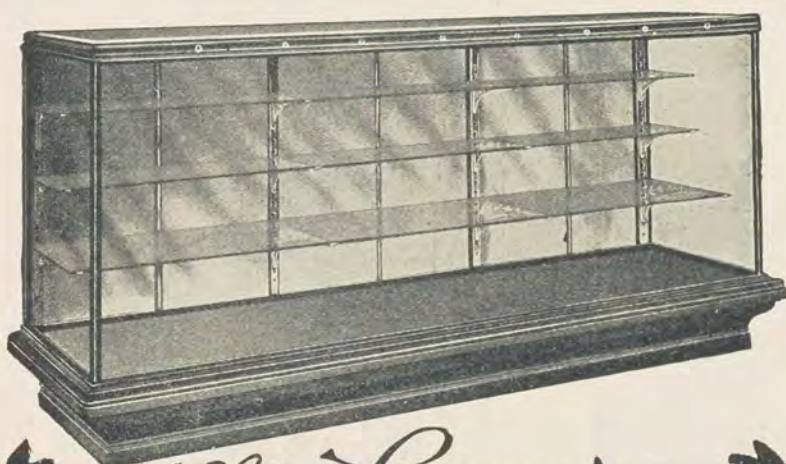
GOODS SENT ON APPROVAL TO RESPONSIBLE PARTIES.

Don't wait for our travelers, but order direct from

**OLDEST
RING MAKERS IN
AMERICA**

M. B. BRYANT & CO.

**7
Maiden Lane
New York**



Silent Salesman
TRADE MARK

SHOW CASES

Our proposition—the best made show cases on the market—the original, unique, successful **Phillips' Illuminated** whose perfect illuminating features are covered by our patents. We make good wall cases, too. Send for descriptive circular (lithographed in colors) and full particulars.

JOHN PHILLIPS & CO. L't'd

CANADIAN BRANCH
WINDSOR, ONTARIO

DETROIT, MICH.

L. L. CLINE. Adv. Det.

JANUARY SNAP

1000 dozen regular **\$1.25** dozen gray finished body, polished pivots **BALANCE STAFFS** at **\$1.00** per dozen.



2000 dozen **GARNET COCK** and **FOOT JEWELS**. Regular price **\$1.25** dozen. Guaranteed perfect, mounted by expert workmen, finished with sapphire tool. Every Jewel inspected before leaving the factory. Special price for January only **\$1.00** per dozen.



Your money back if not satisfied.

TIDD & CO.

Columbiana, Ohio

All K. & D. Staking Tools are Standard

We have in the past made a special Staking Tool with the number and the word **National** stamped on the bottom of the frame and each punch numbered, but discontinued same September 29, 1900.

Hereafter, all Staking Tools made by Kendrick & Davis will be numbered on the bottom of the frame and marked with our trade-mark **K. & D.** and each punch numbered.

KENDRICK & DAVIS

Lebanon, N. H.

For sale by the Trade.



HALF-SIZE

Kreider's One Hand Pin Vise, No. 230.
Quickest operating, strongest grip.



Optical Screw Driver, No. 412.
Aluminum Handle, Rubber Head, Interchangeable Blades.



Interchangeable Chuck Pin Vise, No. 178.

We Have Bought

from the

CLOSING-OUT SALE

of the Old-Established House of

TELL A. BEGUELIN

20 Watch Companies'

Material

Comprising the following companies:

WALTHAM
COLUMBUS
TRENTON
ROCKFORD
WATERBURY
MANHATTAN
LONGINES

ELGIN
E. HOWARD & CO.
COLUMBUS
LANCASTER
CHESHIRE
HAMPDEN

ILLINOIS
U. S. WALTHAM
SETH THOMAS
NEW YORK STANDARD
NON MAGNETIC
COLUMBIA
TIMING AND REPEATING

From this Stock we shall be in a position to fill all Orders for the most difficult parts of the movement.

Don't Forget—We are Still in the Lead with Our “**Regent Specialties**” for all American Watches, such as Balance Staffs, Balance Jewels, Mainsprings, Roller Jewels, Hour and Minute Hands, Second Hands.

We fill Orders for **ALL SUPPLIES** in Our Line, from any Catalogue published, at market prices.

Our New 1902 Pocket Price-List of Tools and Material is under way. Place your name on the list for one, which will be sent soon as completed.

CROSS & BEGUELIN

Importers, Exporters and Manufacturers

WATCHES, DIAMONDS, JEWELRY
SILVER-PLATED WARE, Etc

17 Maiden Lane, New York

^{8d} THE LEDOS MFG. CO.

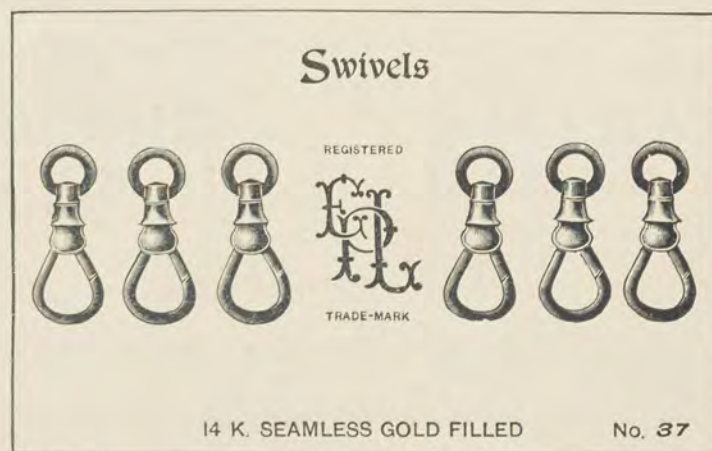
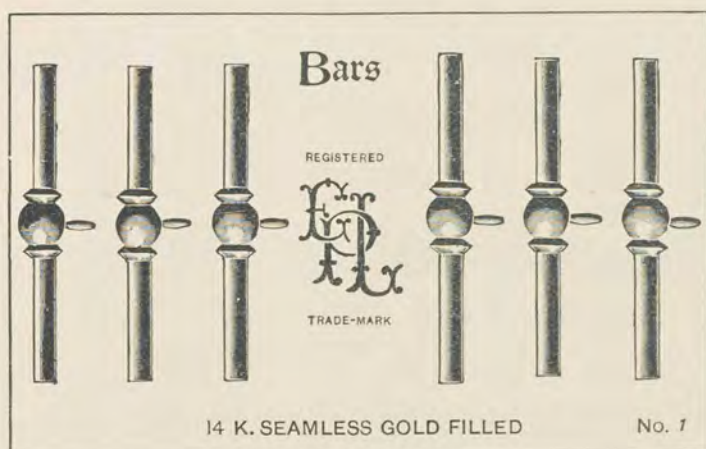
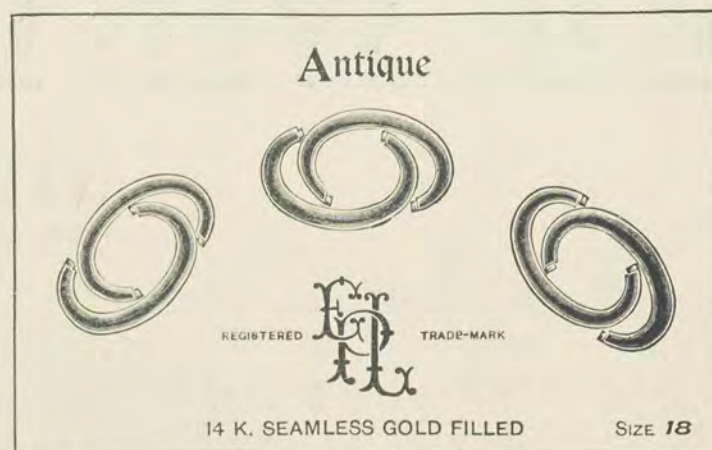
34-36 Pearl Street, Newark, N. J., U. S. A.

Manufacturers of

Watch Case Materials Jewelers' Findings

Crowns	Ears	Spring Rings
Pendants	Bars and Sleeves	Jump Rings
Bows	Stems and Collets	Snaps
Springs	Swivels	Hooks
Bezels	Chains	Solders
Centers	Bars	Etc.
Bushings	Toggle Chains	

For High-Grade Goods Look for our "Registered Trade-Mark"



THE NUMA SPRING

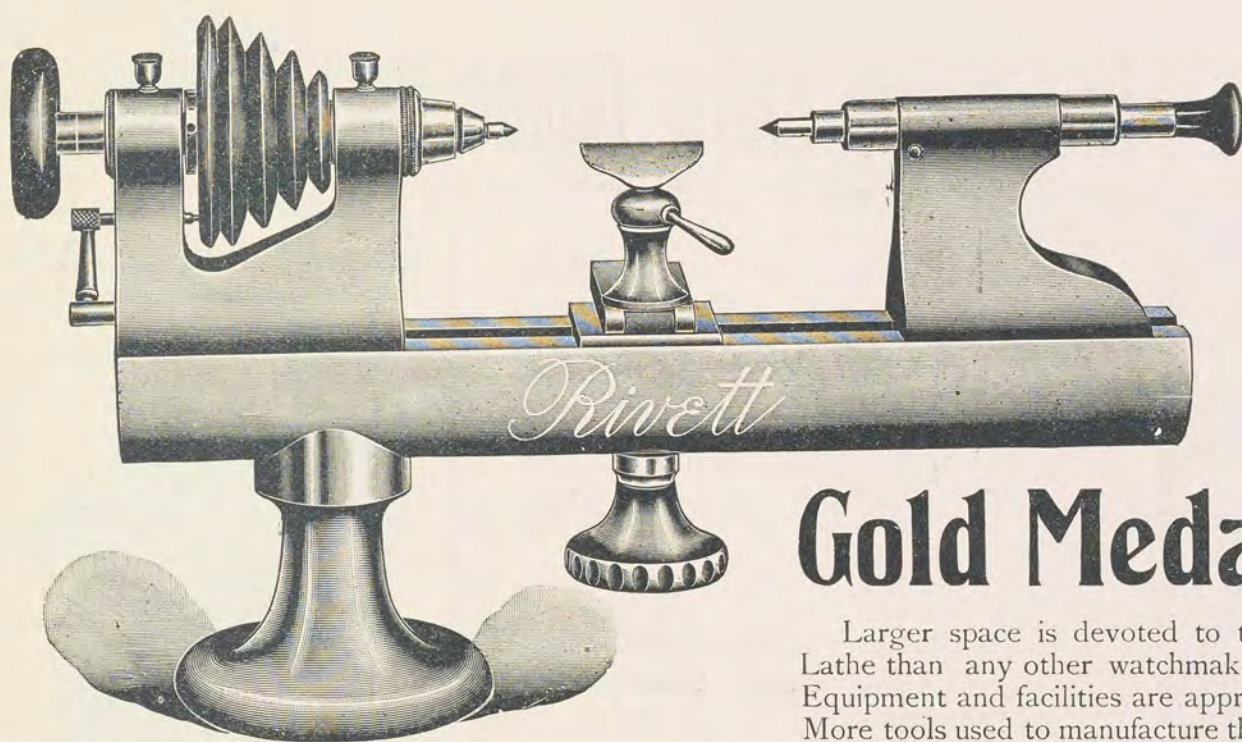


The most perfect spring made in lock or lift. Can be used in place of a solid steel or any other spring. Presents an unbroken surface in watch case center, making the case absolutely dust-proof. Every spring perfectly finished and guaranteed.



Notice: Our New Catalogue for 1902 will soon be ready for delivery

N. B.—Sent only to jobbers



^{8e}
Rivett

The RIVETT Lathe is in all first-class Institutions to-day, and when you buy it you know you are in line with the best.

Gold Medal Lathe

Larger space is devoted to the manufacture of the Rivett Lathe than any other watchmakers' lathe in the country. Equipment and facilities are approached by none. More tools used to manufacture the Rivett Lathe than any other. We can show that the schools which turn out the best watchmakers, use the Rivett Lathe.

Send for Catalogue

Gold Medal Awarded at the Pan-American Exposition
FANEUIL WATCH TOOL CO.

Brighton

Boston, Mass., U. S. A.

THE YEAR-LONG CLOCK

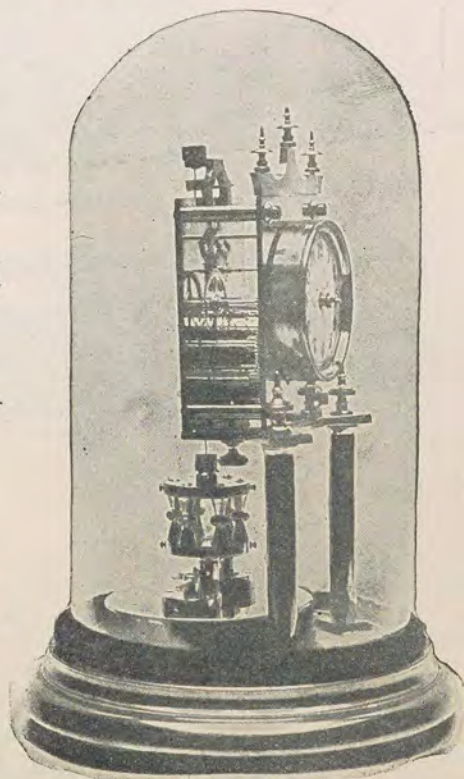
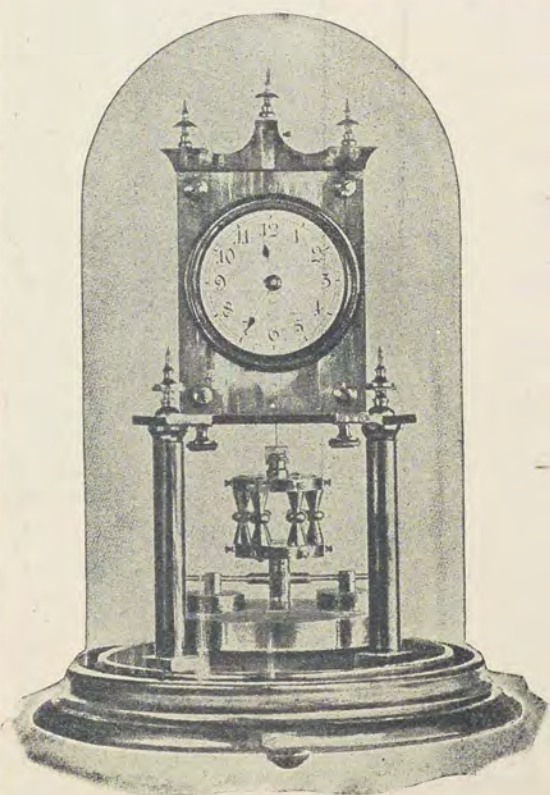
Runs 400 Days
with one winding

Most Unique Clock
Made

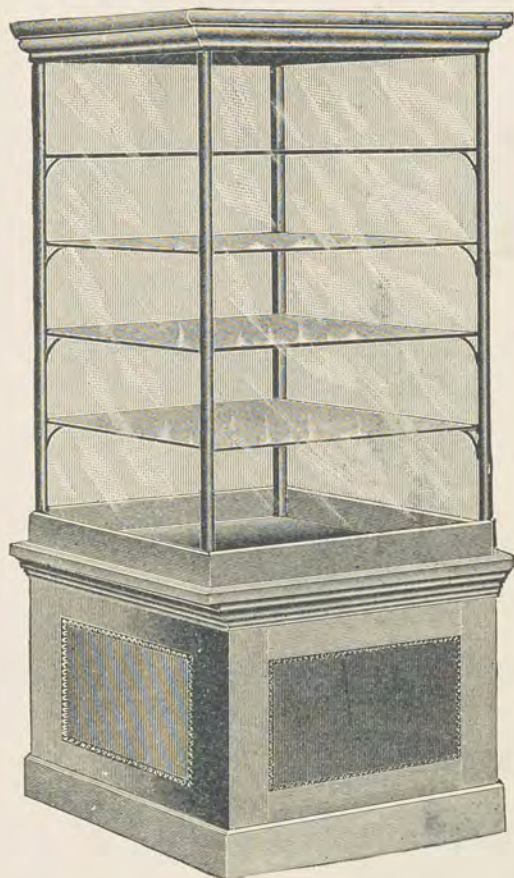
Jobbing Trade Supplied

Jos. B. Bechtel & Co.

719 Sansom Street
Philadelphia, Pa.



Bargains in Plate-Glass Show Cases and Tables



No. 6

2 Upright Cases, double thick glass, cherry finish, with cupboard in base; case is 6 feet 2 inches high, 2 feet 7 inches wide, 2 feet 2 inches deep, with 4 plate-glass shelves on brackets.

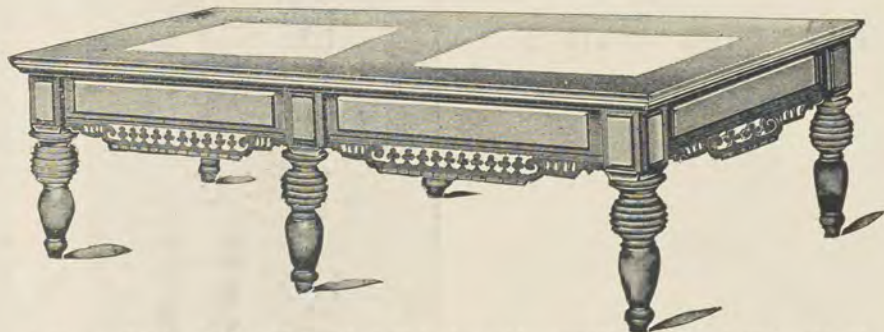
\$20.00 complete, net cash.

Boxed F. O. B. Chicago.

CHERRY.



All glass, full length of case drop doors with mirrors.



4 Cherry Tables 10 feet long, 2 feet 10 inches wide, paneled front and ends, carved ornaments, turned legs, cherry finish.

3 Cherry Tables, 10 feet long, 2 feet 6 inches wide, made as above.

2 Cherry Tables 9 feet long, 2 feet 6 inches wide, made same as above.

At \$1.40 per foot, net cash. Crated F. O. B. Chicago.

Alterations we contemplate making after the first of the year, enables us to offer the trade a decided bargain in a lot of fine plate-glass Show Cases and Tables in cherry finish, consisting of

- 4 Plate-Glass Counter Cases, each 10 feet long, 2 feet 8 inches wide, 19 inches high.
- 3 Plate-Glass Counter Cases, each 10 feet long, 2 feet 4 inches wide, 19 inches high.
- 2 Plate-Glass Counter Cases, each 9 feet long, 2 feet 4 inches wide, 19 inches high.

At **\$4.20** per foot net cash,
Boxed F. O. B. Chicago.

Orders
will
have
prompt
attention

FINE OAK REGULATOR

12-inch porcelain dial, sweep second, compensating pendulum, solid cut pinion, retaining power.

FIRST QUALITY SWISS MOVEMENT
Pin escapement



No. 26, Oak Only.

Glass sides, 81 inches high, width 21 inches.

Net cash, \$30.00

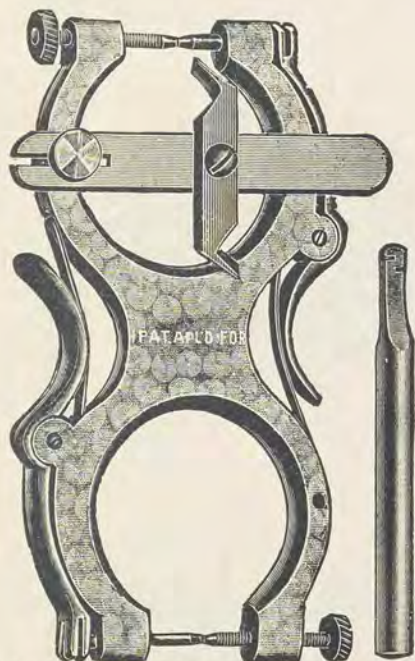
We furnish 3-Jar Mercury Pendulum, net cash, \$15.75 extra.

B. F. NORRIS, ALISTER & CO.

103 State Street, CHICAGO, ILL.

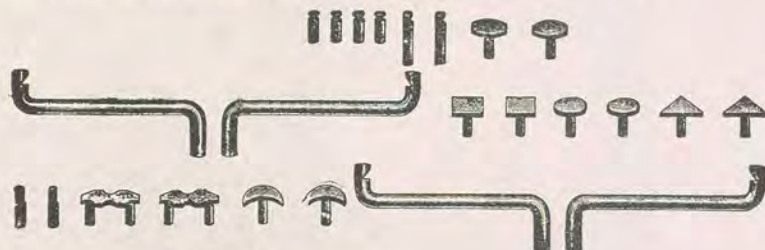
Send Us Your Orders for Anything and Everything ^{8g}

in TOOLS, MATERIAL and OPTICAL GOODS. All orders accurately and promptly filled.



No. 18 K. The Perfect Balance Wheel-Truing Caliper.

The latest and most perfect parallel truing caliper made. No work bench complete without one. Price, each, \$2.50.



Showing the Block Complete with Ball Base on Ring Pad

Showing the Block with Flat Base

No. 19 K. New Improved "King Bee" Engraving Block
Complete with attachments, including pad,
\$5.00

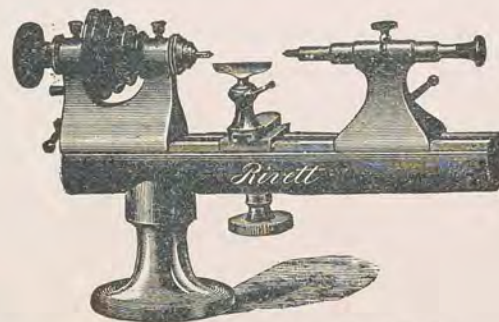


No. 20 K. Genuine Webster-Whitcomb Lathe

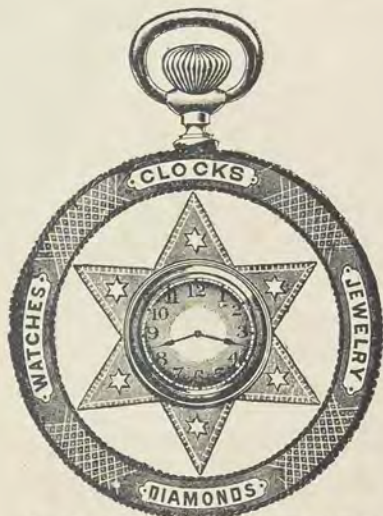
with tailstock, screw chuck, taper chuck, 6 1/4-inch cement brasses and belting, complete, for \$25.38 net cash.



No. 21 K. Genuine Moseley No. 2 Lathe
with tailstock, screw chuck, taper chuck, 6 1/4-inch cement brasses and belting, complete, for \$33.85 net cash.



No. 22 K. Genuine Rivett No. 2 Lathe
with tailstock, screw chuck, taper chuck, 6 1/4-inch cement brasses and belting, complete, for \$32.90 net cash.



No. 23 K. 20th Century Watch Sign.

Star, rim and bow made of iron. Gilded with best quality of gold leaf, zinc dial; warranted for 5 years. Size from top of bow to bottom of sign 37 inches, outer rim 28 inches. \$14.25 net cash.



No. 24 K. Father Time Post Sign.

Size 30 x 38 inches. Gold leaf gilded, and warranted for 5 years. This price does not include post. Regular price \$37.80. Our price, net cash, \$21.00.



No. 25 K. Father Time Watch Sign.

Gold gilded; warranted 5 years; outside measure 28 inches. Regular price, \$7.00. Our price, net cash, \$11.00.

B. F. NORRIS, ALISTER & CO.

Wholesale Jewelers and Dealers in Tools, Material and Optical Goods
103 State Street, CHICAGO, ILL.

EVERY WATCH
IS TESTED BEFORE
IT LEAVES THE FACTORY

TRENTON WATCHES are reliable timekeepers and peerless for their price. You will find them easy sellers.




No. 62. 12 jewels; solid nickel top plate, handsomely damaskeened in gold; comp. balance; screw bankings; straight line lever escapement; micrometer regulator; Breguet hairspring; handsome white enamel dial; fits regular lever or pendant set cases.
Price, \$7.00.



No. 52. 7 jewels, nickel damaskeened comp. balance, screw bankings, straight line lever escapement, hardened and tempered hairspring, quick train; and fits regular lever or pendant set cases.
Price, \$5.00.



No. 7. 7 jewels, nickel damaskeened comp. balance, screw bankings, straight line lever escapement, hardened and tempered hairspring, handsome white enamel dial; fits regular lever or pendant set cases.
Price, \$4.00.

PRICES ACCORDING TO KEYSTONE KEY.

ASK YOUR JOBBER FOR THEM.

Trenton Watch Co.
TRENTON, N. J.

S. MARTIN Jewelers' Auctioneer

784 First Street

Long Distance Telephone
Number 3234 North

MILWAUKEE, WIS.

From December 2nd to December 11th, 1901, I received twenty-six telegrams from jewelers who wanted me to go at once and open sales for them. Don't wait till the last minute or you are liable to be disappointed. You can't expect a first-class auctioneer to be able to go to you at a moment's notice.

Double your holiday business by arranging for an auction sale now. If you are in doubt as to who is the best auctioneer, ask the Mermod-Jaccard Jewelry Co., of St. Louis, Mo., who tested all the leaders, and know who gives the best results. "By their works ye shall know them."



He Wont See It

The jeweler who can't see prosperity ahead is he who refuses to look at our new line for next spring.

We have tried our best to make this new line absolutely the finest on the market.

We have surpassed our most sanguine expectations. For quality and durability we know it is unequalled. Prosperity is written on every link of every pattern.

Don't buy chains of any kind until you have considered our line.

We make everything in chains—all styles—all patterns.

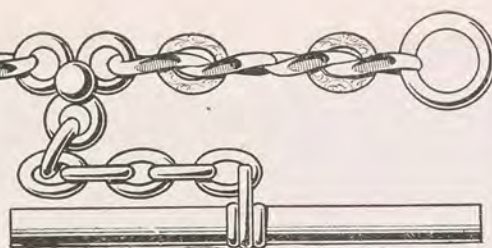
L. S. & Co. stamped on a chain means that there is a strong guarantee back of it.

You will find it to your interest to get prices on our new line.

Ask your jobber.

LOUIS STERN & CO.

Providence, R. I.



A FEW OF OUR SPECIALTIES



Your stock of Materials and Tools is probably low—neglected during the rush of the busy season. We would like the opportunity of filling a sample order from you, and call your attention to a few of our specialties listed below. We guarantee prompt service and first-class goods. We have had 20 years' experience in filling material orders.

★ **"STAR" Brand American Mainsprings**, extra quality, crocus finished. None better made at any price. Special, 85 cents per dozen; \$9.75 per gross.



★ **"STAR" Brand American-Made Cock and Foot Jewels**, extra quality in Settings, made at Waltham on automatic machinery by expert jewel makers, highly finished and are guaranteed a perfect fit. All makes and sizes at the uniform price of \$1.00 per dozen; \$10.50 per gross.

Gem Brand American Cock and Foot Jewels in Settings, 65 cents per dozen, \$7.50 per gross.

★ **"STAR" Brand American-Made Balance Staffs**, extra quality, made at Waltham on automatic machinery by expert staff makers, highly finished and are guaranteed a perfect fit. 7 jewel grades, \$1.25 per dozen; 11 and 15 jewel grades, \$1.50, and 17 jewel grades, \$1.75 per dozen.

Gem Brand Balance Staffs, 65 cents per dozen; \$7.50 per gross.

★ **"STAR" Brand American Roller Jewels**, one gross (12 dozen) nicely assorted in walnut cabinet, 12 bottles, for the leading makes of American watches, perfect fit. Special price, complete, \$2.75, or 25 cents per dozen.

★ **"STAR" Brand American Long Case-Screws**, best quality, one gross (12 dozen), nicely assorted in walnut cabinet, 12 bottles, for the leading makes. Price complete, Special, \$1.75 (dozen, 20 cents).

American Pendant Screws, a very handy screw for holding in stem, per gross, well assorted, 50 cents.

American Spectacle and Eye-Glass Screws, assorted, per gross, 75 cents.

German Silver Bows, first quality. American sizes, 2, 3, 4 oz., assorted, one dozen on card, 25 cents.

Silver Crowns and Stems, one dozen nicely assorted on card. Per card, 90 cts.



★ **"STAR" Brand Pin-Tongs**, extra stiff, best quality, put up in separate sizes, in box, per gross, \$1.00; first quality, 75 cents.

Seamless Gold Filled (12 K.) Watch Bows, 0, 6, 16 and 18 sizes, round, assorted on card, per doz., \$1.75; antique, per doz., \$2.00; extra quality, \$2.75 and \$3.00.

Elgin and Waltham Pendant-Set Bars and Sleeves, one dozen, assorted, in box, \$1.15.

American Winding Stem Combination, containing 4 dozen stems and keys of all sizes suitable for Waltham, Elgin, Boss, Brooklyn and Dueber, complete outfit; per box, \$1.00.

Genuine Luminium Spectacle Frames, Riding Bow or Straight. Very best quality, will not rust or tarnish, very light, highly finished, \$2.75 per dozen.

Genuine Silverine Spectacle Frames (Non-Corrosive), Riding Bow or Straight. First quality, well finished, \$2.25 per dozen.

All the above prices are strictly NET CASH. Orders filled in rotation as received.

H. B. Peters & Co., 177-179 Broadway, New York

The Highest Reputation

the result of merit, has been held by this school for nearly twelve years; teaching and methods are first class and up to date. The system of instruction is not equaled, neither is the work of its students, with the result that we receive ten calls for every workman we can supply. Circulars free.

Canadian Horological Institute

115 King Street E.

H. R. PLAYTNER, Director

TORONTO, ONT.

GOLD MEDAL, PARIS, 1900



A fair trial always brings the same verdict—

"The Best on the Market"

Our **WATCH, CLOCK and CHRONOMETER**

OILS

are pure, uniform and reliable.

Try Them

NEW BEDFORD OIL CO.,

HAMMEL, RIGLANDER & CO.
35 Maiden Lane, New York
Selling Agents

100 Border St.
Boston, Mass., U. S. A.



Leads the World in His Profession

I have conducted nearly all the largest sales in the United States and Canada.
21 YEARS OF CONTINUOUS SUCCESS.

AUCTIONEER

P. J. Burroughs

103 State St., CHICAGO, ILL.

LEADING FIRMS TO WHOM I REFER.

I give below a list of firms who are among the largest and most favorably known among the jewelers of America and Canada, for all of whom I have conducted sales. Any one of whom I believe will be glad to inform you of my success and methods in conducting auction sales:

A. K. Camp Co., Milwaukee, Wis.
Dillon, Wheat & Hancher Co., Wheeling, W. Va.
W. D. Testen, Houston, Texas.
J. E. Mitchell, Fort Worth, Texas.
J. D. Leys, Butte, Mont.
Knepfly & Sons Jewelry Co., Dallas, Texas.
Eustis Bros., Minneapolis, Minn.
Lytle Co., St. Paul, Minn.
Bohm-Bristol Company, Denver, Colo.
W. H. Beck, Sioux City, Iowa.
A. Feldenheimer, Portland, Oregon.
D. Rosenberg, Rochester, N. Y.
Dodd, Werner & Co., Cincinnati, Ohio.
Clemens Hellebush, Cincinnati, Ohio, 2 sales.
C. J. Steinau, Cincinnati, Ohio.

A. & J. Plaut, Cincinnati, Ohio.
A. Steinan, Cincinnati, Ohio.
Cady & Olmstead, Kansas City, Mo.
Anderton & Eberhardt Co., Dayton, Ohio.
M. Wunsch & Co., San Francisco, Cal.
M. German, Los Angeles, Cal.
H. Morton, San Jose, Cal.
A. I. Hall & Son, San Francisco, Cal.
C. S. Raymond, Omaha, Nebr., 2 sales.
Steinmetz Jewelry Co., Helena, Mont.
Barre Bros. Co., Winnipeg, Man., 2 sales.
T. R. J. Ayres & Sons, Keokuk, Iowa.
J. W. Kelly, Carrollton, Mo.
A. H. Simon, St. Paul, Minn., 2 sales.

W. B. Clapp, Chicago, Ill.
W. T. Irvine, La Crosse, Wis.
David H. Harris, Fulton, Mo.
Joseph & Fish, Chicago, Ill.
E. Hallett, Lincoln, Nebr., 2 sales.
J. G. Willeke, Springfield, Mo., 2 sales.
Baldwin & Co., St. Joseph, Mo.
A. Pinover, Saratoga, N. Y.
Wilson & Cutting, Winona, Minn.
A. T. Threadgale, Taylor, Texas.
H. Hahn, Lansing, Mich.
Worden & Morris, Fort Wayne, Ind.
C. S. Durfee, Davenport, Iowa, 2 sales.
D. Domnau & Bro., Waco, Texas.
M. B. Wright & Co., Kansas City, Mo.
M. J. Benjamin, Denver, Colo., 2 sales.
J. H. Bihl, Fremont, Ohio, 4 sales.
John Leith, Bay City, Mich.

The Jaccard Watch and Jewelry Co., Kansas City, Mo.
W. A. Pfister, Sheboygan, Wis.
Geo. Beemer, Lead, South Dakota.
O. F. Zimmerman, Jeffersonville, Ind.
W. B. Taliaferro, Jackson, Tenn.
G. W. Brown, Cheyenne, Wyo.
H. H. Bisbee, Ludington, Mich.
C. W. Miller, Bloomington, Ill.
Hight & Fairfield, Butte, Mont.
W. E. Crellin, Chillicothe, Mo.
Levy & Michaels, Halifax, N. S.
A. McMillan, Ottawa, Ont.
J. B. Williamson, Montreal, Quebec.
Sam Meyers, Denver, Colo.
Geo. W. Biggs' stock, Pittsburg, Pa.
A. Klein, Duluth, Minn.
Barnet & Nonemacher, Columbus, Ohio.

A. N. CLARK & SON, Plainville, Conn.

MANUFACTURERS OF
CYCLE BOLTS
AND NUTS

BICYCLE STAMPINGS

**CLARKS' CELEBRATED LOOP
WATCH KEYS**



Our endeavor to make our Celebrated Loop Watch Key the best key, quality and price considered, in the market is a success, as thousands of watchmakers will testify. We solicit the continued sale of these keys for our mutual benefit.

We also manufacture Manicures, Tweezers and Key Rings in variety.

Order Keys through your jobber, who will furnish them at our price.

J. H. Walbridge & Co., Box 1895, New York, are our agents for Tweezers, Key Rings and Manicures.

Stevens & Co., 99 Chambers St., New York, agents for Bicycle Material.

L. LELONG & BROTHER



Southwest Corner
Halsey and Marshall Streets
NEWARK, N. J.

Gold and Silver Refiners,
Assayers and

Sweep Smelters

**BULLION SOLICITED
SMELTING for the TRADE**

Prompt attention given to Old Gold and Silver forwarded to us by mail or express

Sweepings Our Specialty



One of Our Modern Silverware Wall Cases

WALL CASES, FLOOR CASES, SHOW CASES, CROSS PARTITIONS, SCREENS, Etc.

We make a complete line of Modern Jewelry Fixtures, Medium and High Grade
"We Lead Where Others Cannot Follow"

In Practical Arrangements
In Correct Designs
In Selection of Materials
In Modern Arrangements
In High-Grade Finish

AT PRICES THAT ARE RIGHT

Send 25 cents in stamps for our 20th Century Fixture Catalogue.

Over 300 pages, size 7 1/2 x 11 in. A book of information, suggestions, prices, etc., illustrating outfits from \$300 up to the finest. A regular Encyclopedia Americana.

Regarding our goods, ask our customers. Regarding our responsibility, ask any bank or business house in our city, or any commercial agency.

M. Winter Lumber Company, The High-Grade Fixture Makers
Established 1865
Sheboygan, Wisconsin, U. S. A.

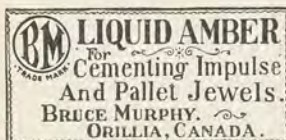
After Christmas



After the busy holiday season comes leisure to overtake accumulated work.

Among the materials you really need for it is a bottle of **LIQUID AMBER**.

One of the handiest things on the jewelers' bench, **strong, clean and convenient to use.**



The genuine always has this label on the bottle, (printed in red ink). Don't accept substitutes.

Put Liquid Amber on your material order. All the dealers sell it. Price, 25c.

SUSSFELD, LORSCH & CO.
37 Maiden Lane,
NEW YORK

Wholesale Distributing Agents

Caution to Watchmakers

Our "U. S." Mainsprings are acknowledged by watchmakers throughout the United States to be the best springs in point of finish and quality, for the money, ever placed on the market. We desire to maintain this reputation for the "U. S." springs, and would therefore call your attention to the fact that an imitation spring resembling the "U. S." has been offered for sale, and in some instances, we are informed, has even been placed in "U. S." boxes. To guard against this deception we would suggest that you exercise the utmost caution in making your purchases, and insist that the trade-mark "U. S." appear engraved upon each spring.

Ask your jobber for them



Sole Agents for
Fleming's Patent Corrugated Universal Case Springs

HENRY ZIMMERN & Co., Importers of Watch Material
47 Maiden Lane, NEW YORK



SEWING SHIELD



144



140



104



136 E



114



STYLE B



136



108



129 B

ESTABLISHED 1832
KETCHAM & McDOUGALL
MANUFACTURERS
GOLD & STERLING SILVER THIMBLES
AUTOMATIC EYE GLASS HOLDERS
37 AND 39 MAIDEN LANE, N. Y.
SEND FOR CATALOGUE "E"



143



154



149



THE BEST OIL is an **ESSENTIAL** of the best watches and the best watch work; poor oil is injurious to both.

EZRA KELLEY'S WATCH CLOCK and CHRONOMETER OIL



has been the **Standard of the World for over 70 Years**

All horologists concede its superiority; the best horologists use no other. All who pride themselves in their repair work or the timepieces they sell should tie to it. It's best for the timepieces, for your reputation and for your business.

Henry Ginell & Co., General Selling Agents
United States and Canada
31 Maiden Lane, New York

Grimshaw & Baxter, Sole European Agents
35 Goswell Street, London

**BEST
PRICES
FOR
OLD
GOLD
AND
SILVER**

IT WILL PAY YOU

to send us your OLD GOLD, SILVER, FILINGS, POLISH-
INGS, SWEEPS, HAND-WASHINGS, ETC.

IT PAYS US

to make Prompt and Honest Returns.
We want your trade and wish to keep it.

WE PAY FOR OLD GOLD

22 K., 88c. per dwt.
20 K., 80c. " "
18 K., 72c. " "
16 K., 64c. " "
14 K., 56c. " "

12 K., 48c. per dwt.
10 K., 40c. " "
8 K., 32c. " "
6 K., 24c. " "
4 K., 16c. " "

Silver and Platinum at market rates.



FINE GOLD AND SILVER FOR SALE, EITHER ROLLED OR GRANULATED

T.B.HAGSTOZ COMPANY, Limited

SMELTERS, REFINERS
AND ASSAYERS

709 Sansom Street, Philadelphia

WORKS: Riverside, Burlington Co., N. J.

In the Watch Repairing World

"Men may come and men may go," but **Watch Repairing**,
like Tennyson's brook, "goes on forever," and the owner of

A Webster-Whitcomb Lathe

never tires of extolling its good running and enduring qualities,
which, with other features, have enabled it to still remain a favorite
in the race, the prize for which is the commendation and hearty
appreciation of the watch repairing world.

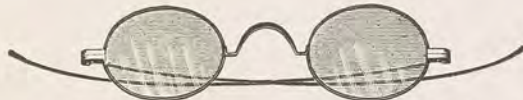
We have just finished an extension to our factory, which will enable us to
meet the growing demands for our product more promptly.

American Watch Tool Co.
Waltham, Mass.

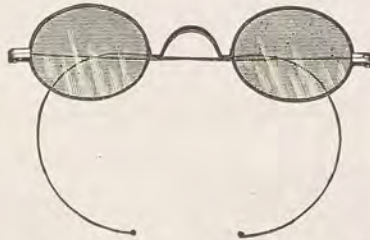
PROGRESSIVE BUSINESS MEN DEMAND GOODS THAT ARE HIGH IN QUALITY AND LOW IN PRICE. THESE REQUISITES ARE STRIKINGLY COMBINED IN ALL OF THE FOLLOWING STYLES:

"800" Grade.

(1 Eye Size. Interchangeable.)



No. 800 ¹ / ₂ .	Plano.	Nickel-Plated Frame.
No. 814 ¹ / ₂ .	Double Cx.	" " "
No. 825 ¹ / ₂ .	Periscopic Cx.	" " "



No. 807 ¹ / ₂ .	Plano.	Riding Bow.	Nickel-Plated.
No. 817 ¹ / ₂ .	Double Cx.	" "	" "
No. 827 ¹ / ₂ .	Periscopic Cx.	" "	" "

SEND TO US FOR DESCRIPTIVE CIRCULARS, BUT ASK YOUR JOBBER FOR OUR GOODS. IF YOU CANNOT OBTAIN OUR STYLES FROM YOUR JOBBER, WE WILL SEND YOU THE NAME OF THE NEAREST DEALER WHO CAN FILL YOUR ORDERS.

T. A. WILLSON & Co.

Manufacturing Opticians,
READING, PA.

14
Ask your Jobber for

LOCKETS

Made by

Wightman & Hough Co.

Providence, R. I.

Established 1856



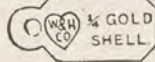
Trade-Mark

Largest and Oldest Makers
of every size and shape in vogue

**SOLID GOLD
STERLING SILVER**

**GOLD FILLED
ROLLED-PLATE**

*The Design, Quality and Finish
of goods steadily increase our reputation and sales*

Our  **Locket** will satisfy your customers.
Can be stone-set or engraved without cutting through
and will wear equal to solid gold.

LANDIS SCHOOL OF ENGRAVING

WINTER COURSE

To enter, write us at once for terms and make advance engagements, as we only accept a **Limited** number of pupils at one time.

We devote our entire time to their instruction and advancement.

When desired, we get positions for all Graduates, as there is a great demand for our pupils.

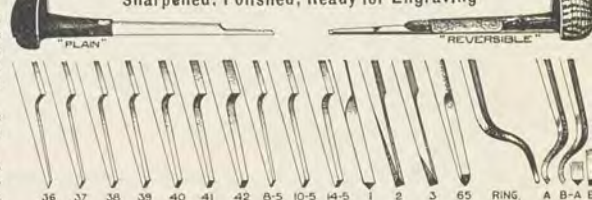
We have a Special Short Course for advanced engravers. *Correspondence Solicited.*

M. L. LANDIS
44 Center Street

DETROIT, MICH.

You can order any one graver at the above prices. The Full Set of 17 Gravers mounted in 11 "Plain" and 6 "Reversible" handles, in perfect order for engraving, complete, \$8.50. All gravers are tested and guaranteed. Monogram Charts, \$1.50 Orders promptly attended to on receipt of cash or money order for same.

A Fine and Complete Set of Gravers, Perfectly Handled, Sharpened, Polished, Ready for Engraving



	Numbers	"Plain"	"Reversible"	Per set.
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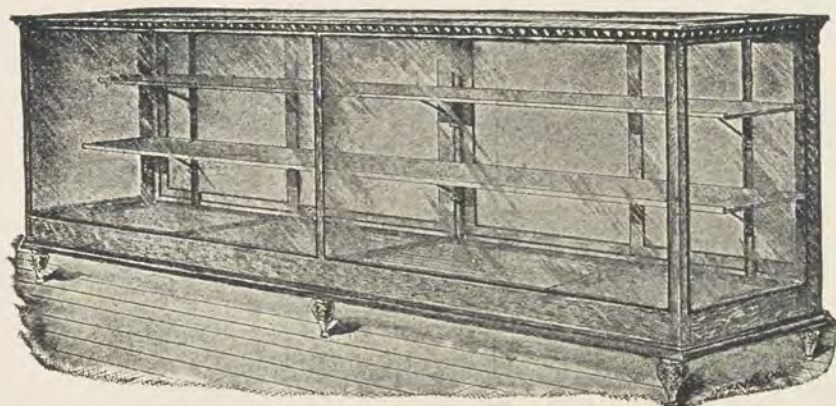
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CHICAGO

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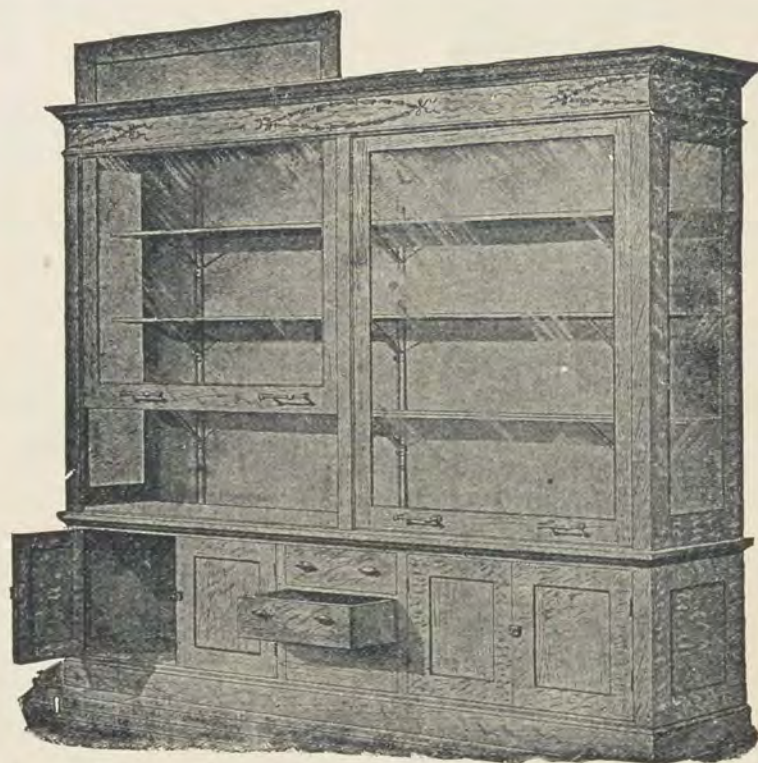
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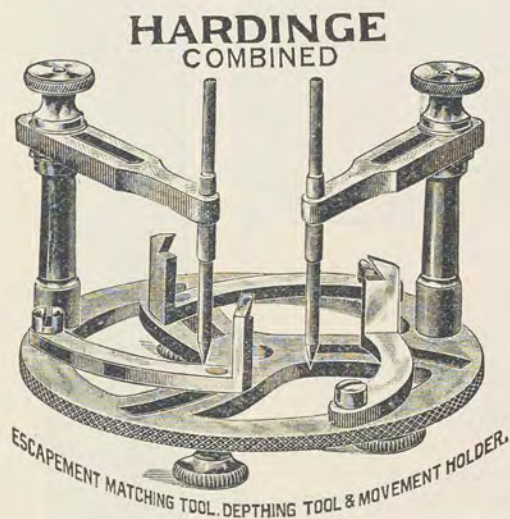
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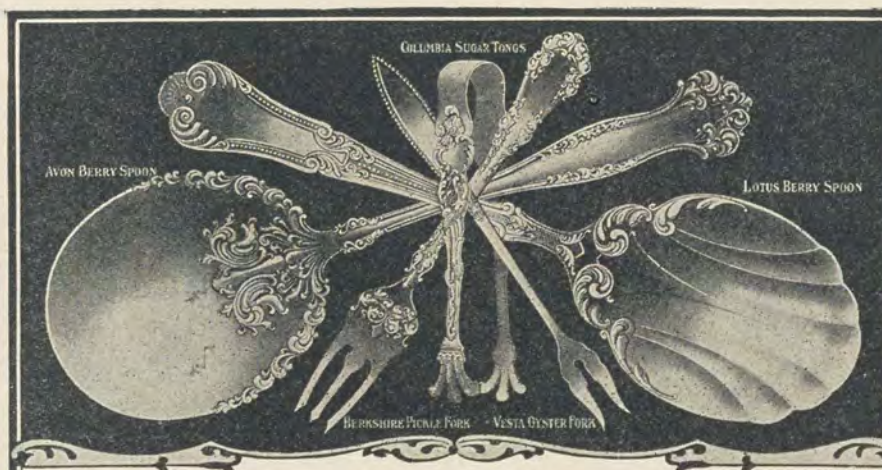


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NEW YORK CHICAGO. SAN FRANCISCO. HAMILTON, CANADA.

THE KEYSTONE

Vol. 23

Philadelphia, January, 1902

No. 1

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THE KEYSTONE

A Monthly Journal Devoted to the Interests of the Jewelry and Optical Trades.

Subscription—One Dollar per year, postpaid, to all parts of the United States, Hawaii, Porto Rico, Philippines, Guam, U. S. Island of Samoa, Cuba, Mexico and Canada (except Newfoundland); **single copies**, regular issues, 15 cents; special issues, 25 cents. To Foreign Countries 10 Shillings (\$2.44) per year; **single copies**, 1 Shilling (25 cents).

Payment for THE KEYSTONE, when sent by mail, should be made by a Post-Office Money Order, Bank Check or Draft, or an Express Money Order. When neither of these can be procured, send the money in a Registered Letter. **All Remittances should be made payable to THE KEYSTONE.**

Change of Address—Subscribers desiring their address changed, should give the old as well as the new address.

Advertisements—Advertising rates furnished on application. No advertisements but those of a reputable character will be inserted.

To Advertisers—Copy for advertisements must reach us by the 25th of each month to insure insertion in the issue of the following month. Notices of changes in advertisements should reach us not later than the 20th of the previous month.

All communications should be addressed to

THE KEYSTONE,
19TH & BROWN STREETS,

CHICAGO OFFICE, 108 STATE ST.
AUSTRALIA, BOSCH, BARTHEL & CO., 198 PITT STREET, SYDNEY, N. S. W.
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New Series of Articles on the Chronometer Escapement

OUR readers will notice that the series of articles on the Cylinder Escapement which began in the August, 1901, number ends with this issue. We have had abundant evidence in our daily correspondence that this series was highly appreciated by practical horologists, and as we have as yet come to no definite decision as to its republication in book form, we would suggest that the articles be carefully preserved for reperusal and reference. In view of the appreciation extended this series, we take pleasure in announcing that a new series of articles on the Chronometer Escapement will be begun in our February issue. This series, like the others, will thoroughly cover the subject, and both matter and illustration will be so full and explicit that the study of it will be at once a pleasure and profit.

The New Keystone

THIS issue of THE KEYSTONE may be said to mark an epoch in its short, but notable career. We say short advisedly, because even now it is barely "of age." Some twenty years ago THE KEYSTONE was started as a four-page circular of unpretentious exterior, but even then interesting as to contents. So interesting, indeed, that it was from the start a welcome monthly visitor to the trade, and it is the boast of many jewelers to-day that they have preserved every number from the first little saffron sheet issued in the early eighties. The remarkable success of THE KEYSTONE in subsequent years may not have been foreseen at that time, yet it was only the natural result of forces even then in operation—effort, enterprise and intelligent direction. To the great body of jewelers and opticians the story of this journal needs no retelling. Its evolution has been at once their admiration and their pride. They have watched its development with an almost proprietary interest—how it grew year after year in avoirdupois and usefulness until it became absolutely indispensable to every progressive member of the trade. There is probably no parallel in trades journalism for the stride

from the four-page circular of twenty years ago to the magnificent 250-page magazine of November, 1901, and the trade may rely on still greater triumphs in the future.

OUR readers have noticed by this time that with the present issue we have made the change in the size of our journal, which many of them suggested and which all approved. While the old size might be unobjectionable in a journal of a limited number of pages, it was unquestionably too large for the convenient handling of a magazine containing so many pages as THE KEYSTONE. At great expense we have conformed to the wishes of our readers in this regard, and our journal is now of a size which will make it convenient to handle and preserve. As a perusal of this issue will prove, the diminution in size does not mean any diminution in contents, which, on the contrary, are more abundant and valuable than ever. Our readers will observe that the present number is not only of more presentable proportions, but handsomer and more methodic in make-up. There is such an arrangement of departments as will greatly facilitate reference, each department being practically complete in itself. Many tell us that they have not sufficient time to read the entire contents, and such busy subscribers will find that in the new arrangement the matter is so systematized that they can reap maximum benefit from a minimum of time devoted to its perusal.

In this and future issues will be noticed articles translated from foreign languages. This is in line with the progressive spirit of THE KEYSTONE, which endeavors to furnish not only the best of American and English trade literature, but also the most valuable of the horological contributions which are published from time to time in other languages, especially French and German.

This first issue of the year, with its betterment of form and matter, is sufficient evidence to our readers that we are determined to make our improvements keep pace with their greater appreciation, and we join with them in the hope that the present year, so auspiciously begun, will be one of still greater prosperity for the trade and for the country.

Signaling Across the Ocean

IF it be true that Marconi has succeeded in signaling across the ocean without the aid of wires or other medium than the invisible atmosphere, the first year of the century has to its credit the most startling scientific achievement so far recorded.

Star to star vibrates light; may soul to soul
Strike thro' a finer element of her own?

So wrote the imaginative Tennyson. Has Marconi furnished the answer to the poet's question? When Shakespeare made Macbeth send forth pity "horsed on the sightless couriers of the air" mayhap the gifted bard saw in imagination the marvelous achievement of the Italian inventor. It is a strange coincidence that Franklin by means of a kite first called from the sky the mystic force electricity, and that again by means of a kite has this modern wizard made the mysterious fluid his slave. It is true that not much has yet been accomplished, but if the three-dot letter S can be sent through space from Land's End to Cape Race, why not the remainder of the alphabet? The basic fact established, the rest will be a matter of time and technical detail.

While there are a few doubting Thomases in regard to Marconi's achievement, it is the belief of the scientific world that we have entered on a new era of electrical communication, one which may make junk out of the existing costly and complicated agencies of telegraphic transmission. The time seems to be at hand when the wearied million-maker will find it impossible to lose himself even for a day. Heretofore it has been possible to escape from the sight and sound of busy mankind by crossing the gang plank of an ocean liner, but no longer will this privilege be left to nerve-racked humanity. The day is probably at hand when no ship will leave port without an apparatus for receiving the bulletins of the world's daily happenings.

ANOTHER notable triumph of the first year of the century is the submarine torpedo boat, the complete success of which is evidenced in the Government's intention to build half a dozen of the same type as the now famous *Holland*, but of larger dimensions. This unique craft seems to have successfully performed all the strange feats expected from a submarine boat of the invisibly destructive kind described from time to time by some of the imaginative masters of fiction. She dives with startling celerity—moves easily under the surface, remains submerged for an indefinite time, fires torpedoes with accuracy while still submerged, and responds to human guidance with a will that forebodes great changes in future naval warfare. With wireless messages and a dirigible balloon in the air

and a dirigible craft beneath the waters, the new century has made a truly startling beginning. Yet such is the age we live in that Marconi's achievement has created little wonder.

Banks Evidence the General Prosperity

THE pride of this great Republic is the prosperity and comparative independence of its working people. If the extreme of wealth has been reached, there's the compensating consolation that the average of living comforts has been advanced all around. This is well evidenced in statistics just issued by the Comptroller of the Currency. From these official figures we learn that both as regards the total amount of deposits and the average amount to the credit of each depositor in saving banks the United States stands ahead of all other countries. The deposits in savings banks in the United States amount to \$2,310,660,000. Germany has the next largest amount of savings deposits, namely, \$1,900,000,000, and Austria-Hungary comes third with \$1,201,240,000. France is credited with deposits amounting to \$854,220,000, and the United Kingdom with deposits amounting to \$829,020,000. The only other countries with deposits amounting to \$200,000,000 or over are Russia, Belgium and Switzerland. The highest average amount to the credit of depositors in savings banks is \$406.23, the figure for the United States.

IT is equally gratifying to learn from the same official source that the highest point ever attained in the resources of the national banks was reached during the year just ended. The aggregate resources of the banks on September 30th last amounted to \$5,695,347,294.96, a gain being shown of \$647,208,795.67 as compared with the most nearly corresponding date of last year. There were 4,279 national banking associations in existence on October 31, 1901. These had an authorized capital stock amounting to \$663,224,195, a net increase for the year of \$30,721,800. The greatest amount of individual deposits held by national banks during the existence of the system was on July 15, 1901, when the deposits amounted to \$2,941,837,428.77.

Banks, other than national, seem to be equally prosperous. There were at the date of the report 12,972 banks of all kinds in the United States, with an aggregate capital of \$1,138,042,134, surplus and undivided profits amounting to \$693,465,095 and \$270,855,253 respectively, deposits aggregating \$8,619,285,110 and loans and discounts to the amount of \$6,491,630,743. And present prospects are that we have entered on a year of even greater prosperity.

New Effort to Abolish Strikes

THE past month furnished one particularly gratifying manifestation of the peace and good will associated with the season in the conference between capital and labor held in New York City. The result of the conference was the formation of an executive committee of thirty-six, which will have the functions of a board of arbitration for the settlement of industrial controversies. The committee, which is to be known hereafter as the Industrial Department of the National Civic Federation, is composed of eminent representatives of capital, labor and the public, whose decision upon the delicate issues that may be submitted to them will be very likely to receive the approval of all parties in interest and of the general public. As declared by the committee, the province of the department will be to promote industrial peace, to preserve friendly relations between employers and workers by "its good offices," to prevent strikes and lockouts, and to assist in the restoration of industrial relations when they have been interrupted. The committee, to attain these highly desirable ends, will, upon the request of both parties to an industrial dispute, act as arbitrator to decide the matters in issue.

THE representative character of the committee is evidenced in the names forming it. Among the thirteen representing the public are ex-President Grover Cleveland, Cornelius N. Bliss, Bishop Potter, Archbishop Ireland, Charles W. Eliot, president of Harvard University, and others noted for superior mentality and breadth of view. Organized labor is represented by twelve well-known luminaries in the world of labor, among them being Samuel Gompers, John Mitchell, F. P. Sargent, T. J. Shaffer, James M. Lynch and James O'Connell, while employees will be represented by Senator Hanna, Charles M. Schwab, John D. Rockefeller, Jr., H. H. Vreeland and eight others equally noted in the world of industry.

Whether the abolition of strikes is feasible or not, much good must necessarily result from the intelligent and broad-minded discussion of disputes by so representative a committee. Any organization that brings labor and capital together in friendly discussion, and so aids in mutual understanding, must, from its very nature, work for good. Whatever the results, it is a step in the right direction.

The members of the committee, alike those representing the public, capital and labor, manifestly regarded their selection as a call of duty, for not even one of them refused to serve. They recognized the nobility of the object and the honor attaching to service in so worthy a cause.

Connecticut Leads in Invention and Industry

THE diminutive State of Connecticut has long been noted for the inventive genius of its people. In proportion to population Connecticut is granted more patents than any other of the sisterhood. As invention and industrial progress go hand in hand, the wonderful showing credited to Connecticut by the census manufacturing returns just published is not surprising. Though forty-two States are larger than Connecticut and twenty-eight have more population, it was tenth on the list in the value of its manufactures in 1890; and the statistics of the twelfth census, when completed, are expected to show that the State holds its relative rank.

The little State of Connecticut, industrially considered, has special interest for the readers of THE KEYSTONE. The histories of the State tell how Eli Terry, Chauncey Jerome, Gideon Roberts and other clock-makers, about the beginning of the last century, were accustomed to pack their saddlebags with clocks and peddle their wares through the country. The great clock industry dates from those days of small beginnings. Connecticut now produces about three-fourths of our home-made clocks, the product being worth \$4,545,047 in 1900. We are exporting now about three times the value of clocks that we import.

In 1890 Connecticut beat all other States in eleven important industries, and it would seem to still enjoy the distinction. In 1900 its brass manufactures amounted to \$48,526,868, a wonderful showing. Back in 1841 some inventive genius produced an automatic machine for making pins, and in 1900 Connecticut made \$1,761,806 worth of pins and needles, which is probably one-half or more of the country's production.

COMMENTING on the industrial greatness of Connecticut the New York *Sun* reminds us that Elias Howe, Jr., invented the sewing-machine, establishing his factory at Bridgeport; and that the Wilson and other famous machines also originated in Connecticut, which, in 1900, produced sewing-machines and attachments valued at \$3,170,137. Goodyear accidentally dropped a piece of rubber powdered with sulphur on a red-hot stove and thus discovered the art of vulcanizing rubber. He gave the impulse that started the rubber factories at Naugatuck, making Connecticut one of the great rubber-working States, the product increasing from \$3,476,398 in 1890 to \$8,246,240 in 1900. Over a century ago the making of nails and other articles of small hardware was pursued in the State as a household industry. These manufactures were long ago transferred to the

factories, which in 1900 produced hardware valued at \$16,301,198. From a small beginning in Hartford, where the process of silver electro-plating was invented about 1846, sprang the great plants at Meriden, Waterbury and other towns that in 1900 produced \$9,538,397 of plated and britannia ware. The total value of Connecticut's manufactured products in 1900 was \$352,824,106, an increase of 42.1 per cent. over the production of 1890! What a glorious result of the little State's pre-eminence in the field of invention.

Munificence of American Millionaires

WHATEVER fault may be found with the American millionaire he is unquestionably the most useful of his species. His liberality is on a par with his fortune, and usually exercised in directions that mean the greatest good to the greatest number. The donations of our wealthy to the cause of education are the marvel of the world beside. The gifts to colleges and schools in the United States for 1899 aggregated \$55,000,000, and it was not expected that in many years to come that splendid total would be surpassed. The total for 1900 dropped to \$35,000,000, and yet was considered large. But when the total for 1901 is added up it will be \$75,000,000 or more. Mrs. Stanford's recent gift of \$30,000,000 to the University of California is the largest single item in the account. Carnegie's \$10,000,000 given to found an institution for research and higher education at Washington comes next, and Rockefeller's \$5,000,000 endowment for a law school in the University of Chicago third. These three gifts make up \$45,000,000 of the grand total for the year and still leave \$30,000,000, contributed in comparatively small amounts.

THE vast educational advantages resulting from this wonderful generosity are evidenced in the figures of registration in the principal colleges and universities of the country for the new college year. From these it appears that the University of California has a university population of 3794, Chicago University one of 3974, Columbia one of 4590. Harvard itself has a round 6000. Michigan has 4156; Minnesota, 3800; Northwestern University has 2523, Pennsylvania has 2907; Princeton, 1391; Wisconsin, 3021, and Yale, 2966. These figures are very impressive, and would be still more so if the aggregate showing of the smaller institutions was available. If education be the panacea for all the ills of society, our country is peculiarly favored, and for this our munificent millionaires merit their meed of praise.

Four Projects of Far-Reaching Importance

THE New Year has opened with a quartette of projects before the people, the accomplishment of which would be of immeasurable advantage to the country at large. The first and most important of these is the Isthmian Canal, the construction of which may yet be credited to the first decade of the twentieth century. The practically unanimous ratification of the Hay-Pauncefote treaty by the Senate has freed the hands of the United States, and the next step rests with Congress. Several canal measures have already been introduced, and out of these one measure will be framed in committee and pushed to enactment. It now seems probable that the Nicaragua route will be the one which will be finally fixed upon.

Another project which merits early and favorable legislation is the Pacific cable, which the President in his message urged as one of the necessities of the time. Seward long ago predicted that some time in the not distant future the Pacific would be the scene of as great a commerce as the Atlantic, and the prediction is now nearing fulfillment. Our acquisition of Hawaii, Guam and the Philippines, and our rapidly expanding trade with Asia furnish such an argument in favor of a Pacific cable as should disarm congressional opposition to the project.

THE third monster project is the building of a railroad to connect the three Americas, which was favored by the Pan-American Congress, recently in session in the City of Mexico. The United States and Mexico are, of course, already connected by rail, and the job of making connections between the roads running north and south through the southern part of the hemisphere would be by no means formidable in this age of wizard engineering and limitless capital. South and Central America are rapidly increasing in population and wealth and furnish a tempting field for expansive United States trade and enterprise.

The fourth vast project is the irrigation and fructification of the vast arid areas of the West. In his message to Congress President Roosevelt recommended that the Federal Government shall undertake to establish a great system of reservoirs and canals for the irrigation of arid lands; and that these works shall be paid for from the national treasury. This would mean much not only for the West but for the entire country. All these projects, vast though they be, are such as the country must undertake sooner or later, and it is quite natural that the agitation of them should be co-incident with a bursting treasury.

WITH THE PASSING OF **THE OLD YEAR** WE HAVE MADE READY **FOR THE NEW**

The advantages of buying Silverware of manufacturers whose goods are not illustrated in dry goods and department store catalogues are too obvious to need comment.

Our hope is that our customers and ourselves may continue to enjoy the exceptional and favorable Business Relations established in the past and that they will expand and grow closer during the year ahead.

The GORHAM stock for the SPRING SEASON will be found adequate to meet every possible demand for WEDDINGS, EASTER, and all PRESENTATIONS.

GORHAM reputation has never been more highly valued or more widely appreciated than during 1901.

Our refusal to sell our goods to DRY GOODS and DEPARTMENT STORES has insured our customers against bargain-counter competition and sustained GORHAM exclusiveness and GORHAM methods.

Grand Prix

*Paris Exposition
1900*



Five Gold Medals

*Pan-American Exposition
1901*

GORHAM MFG. CO.

Silversmiths

Broadway and Nineteenth Street, NEW YORK

BRANCHES

NEW YORK
21-23 Maiden Lane

CHICAGO
131-137 Wabash Avenue

SAN FRANCISCO
118-120 Sutter Street

WORKS: Providence and New York

The title "Modern Merchandising" is rendered in a large, ornate, blackletter-style font. To the left of the title is a detailed illustration of an antique clock with a round face and decorative hands. To the right is an illustration of a jewelry store window display, featuring a sign that reads "Jewelry Opticians" and various items on display.

Modern Merchandising

The Seasonable "Don'ts"

JANUARY First marks the renaissance of business virtue. It is the time of good resolves, in a majority of business consciences. The New Year makes sentimental appeal for new ways, new ideas, and a general rejuvenation of the whole business system. At no time in the twelvemonth is the impulse to betterment so general. It is the starting point in the progress of reform. And however the well-intended effort may falter and fail, as the days recede; however far below his ideals the merchant may fall, in attempting to realize in practice his hopes and dreams; he is surely better for the attempt; better that he tried at all, even though he tried and failed.

It is the fit time, because of its place in the calendar, to resolve to *do* certain things; but there is as much virtue in resolving *not* to do certain other things. You have probably already made inventory of your shortcomings and have determined on certain positive improvements in your ways: now join to this a determination of negative value, namely that you will *not* do the things which you should not. "Let us take counsel together," and list the needful **DON'T'S**.

Don't (first of all) be discouraged because things have not "panned out" as you had hoped. Even though your inventory does not show the expected gains, do not forget that you have added to your experience, and so have strengthened your capital. You can't measure the value of experience in dollars and cents, but it is a valuable asset. You will do better next time, because of it; you *know* more, now; but

Don't think you know it all. You will have a lot to learn, though you stay in business until you are gray. Be willing to learn from everybody; the customer across the counter may be able to tell you something improving, or intelligently criticise your store methods to your advantage, if you will concede something to your own fallibility.

Don't dispute with your customer. Let him hold to his ignorant notion, if it comforts him and does not reflect on your integrity. To win the argument is to lose the sale, in many instances. Don't interrupt; don't look bored. Be courteous at all times, but not fussy or demonstrative in your politeness, and be equally polite to all. The young woman, with hard, red hands, who is pricing

cheap rings at your counter, may some day leave her wash-tub to marry a rich husband, and you may then be glad for the privilege of closing her carriage-door when she is out shopping.

Don't be ungenerous in your remarks about your competitors. Say nothing and saw wood. The public don't care a button to hear of Jones' shortcomings; and a good word for Jones carries a conviction that you are broad-minded, liberal, and enjoying a prosperity that enables you to "spare a little in contumely."

Don't forget that temperance means more than abstention from liquor-drinking. Be temperate in your manner of speech, in your statement of facts in advertising, in your judgments on subordinates, in your views and thoughts. Keep your head. Remember that though ladies may be absent, gentlemen may be present. Nothing is so everlastingly becoming as manliness.

Don't stay in the old rut. You *know* you are all wrong in certain habits: the habit of getting late to the store, after opening; the habit of loafing too long with a congenial friend over the cigar counter; the habit of "putting off"; the habit of laziness, in respect of window display; the habit of ignoring your bill book; the habit of disrespect to traveling salesmen; the habit of neglect in reading the trade journals; habits evil and mischievous, through a long list. Reform in them. Do things differently, because of a better way. Get outside of yourself, for a long hour, and make note of the shortcomings in the You that you see. January first will be the most profitable day for you of the whole year, if you decide to cut the acquaintance of that You forever, and take up with another and more interesting ego.

Don't ignore the tremendous evolution that is going on in the methods of merchandising. In a little while your present methods will seem to date from Rameses I. The merchant who does not rub his sleepy eyes and waken to the trend of things will doze away in business stupor, to untimely business death. Note the unceasing call for original effort in all directions of mercantile activity. Study the theory of publicity, that your advertising may reflect the advanced thought of the day. Study concurrent ways of window-dressing, that you may "go one better"

on the local average. Study the progressive tendency toward increasing the responsibility of subordinates, and double your own strength by adding to it a new zeal on the part of your helpers. Refresh your own ideas from the congress of ideas which is marshalled by **THE KEYSTONE**. Search the daily newspapers for news of the whole world; for the world has become one vast community with one vast market, and the day of national isolation has passed forever. Rise to the situation which confronts the American citizen on the threshold of 1902, which makes its humblest citizen a factor in the great world-events which are impending, and clothes him with a dignity undreamed of in the vision of the possibilities in an earlier day.

The Proceedings of the Main-spring Club

I

On the first of January, 1902, Solomon Silverplate conceived the idea of organizing a little club, to consist of his three competitors and himself, with several additional persons, representing various branches of the trade, to meet once a month during 1902, for the purpose of discussing pertinent questions and exchanging views. Accordingly, the following gentlemen met at his house, on his invitation, on the evening of New Year's Day: Solomon Silverplate, Henry Hairspring, Peter Pennyweight and Louis Lorgnette, retailers; Frank Footwheel, watchmaker; Johnny Jumpup, office boy; Hi. Hustler, traveling salesman; Benjamin Bargain, jobber, and George Goldskin, ex-manufacturer. After the greetings had been given, the guests seated and a box of cigars passed around, Silverplate rose from his chair, cleared his throat and delivered himself as follows:

"Gentlemen, I have asked you to come together for the purpose of considering the question of organizing ourselves into an informal little club, for our mutual improvement as merchants, present and prospective. I have presumed upon my seniority in years in taking the initiative, and have ventured to ask my competitors to meet me on common ground once a month, to suspend, for one evening, our personal rivalries for trade, and to discuss all sorts of business problems in perfect candor and frank good faith. I am very confident that I can learn much from each one of you. I indulge the hope that I may be able, in turn, to add my share to the common stock of knowledge, and thus each of us will benefit from the experience and ideas of all the others, without dangerously disturbing

(Continued on page 23)

We Wish You a Prosperous New Year

We have just closed the most prosperous year in the history of our business. This is largely due to the splendid support we have received from the trade who appreciate good treatment and skilled service. We are sure our business relations have proven of mutual advantage, and we promise our hearty co-operation for 1902.

Our wish to our customers, and to the trade in general, is that the New Year will bring them increasing prosperity and happiness.

M. A. MEAD & CO.

WATCH JOBBERS

Columbus Memorial Building

CHICAGO

The Proceedings of the Main-spring Club

(Continued from page 21)

his present relative personal position in the trade of the community. We shall all be stronger, and Smithville will fix a new standard of jewelry merchandising, if each one of us hereafter practices the best things preached by all the others. What do you say as to the scheme, gentlemen?"

There was a chorus of "Good!" "First rate!" and in a jiffy Solomon Silverplate was elected chairman.

"How about a constitution and by-laws?" inquired Louis Lorgnette.

"Oh, bother a constitution and all such formal humbug!" said Hairspring. "We'll just take turn-about, as to place of meeting, at our homes, and the host will supply cigars and—well, something wet, on the side; and instead of keeping minutes of our meetings, one of us—Peter Pennyweight, you are the man for that, because you're handy with the pen (your advertisements always make me green with envy of your skill)—Peter will send a report of our monthly meetings to THE KEYSTONE, to insure eternity of fame for all of us. What had you in mind, Mr. Silverplate, as to the subjects to be discussed, the time-limit of talks, etc.?"

"I would suggest," said Silverplate, "that we don't bind ourselves to any fixed programme of subjects, or restrict ourselves too much by arbitrary rules, so that discussion may take its head and trot along easily in light harness; but I think it would be well if one of us, at this meeting, would introduce the subject nearest his personal sympathies, talk for about five minutes, and then we all would pipe in from our several points of view; at the next meeting another would take his turn in introducing the subject, and so each in turn. How does that strike you?"

"Gee whiz!" said Johnny Jumpup, under his breath, to Mr. Lorgnette, his employer. "I ain't a-talkin' before all these men! I ain't got nothin' to say that they'd care to hear. I'll just be settin' around and learnin'. I ain't got no business to be waggin' my chin in *this* crowd."

"What's that, Johnny?" inquired Hi. Hustler, the drummer. "Nothing they'd care to hear? Why, boy, these men'll likely learn something worth knowing from you, if you will just give them your honest opinion on what you have observed of the ways of trading; for it will be the outside criticism of an insider—the views of one who has no part in making the policy of the business, but is part of its machinery. We'll hear from you, Johnny, in time, and I'll stand by you, sure. Now, Mr. Chairman, whose 'turn' is it to talk to-night?"

"Well—er—not yours, Hiram; sorry to disappoint you, for you *are* a pushing fellow; but you will have your chance later. We should like to hear from Mr. Hairspring, if he is ready."

Henry Hairspring laid down his cigar, gave a meditative wipe to his forehead, scratched his chin, rose, and said:

"I am *not* ready to bring forward the subject which is closest to my sympathies, for we can't do justice to it in only *half* an evening; we haven't much time left to-night, as we have been 'organizing'; so I think it fair that I should not be given a penny loaf for my nickel. Suppose we say to-night, as Rip Van Winkle used to say of his extra glass of liquor, that it 'won't count,' and I'll suggest, offhand, as a subject for this evening's short talk, and as appropriate for the first day of the 'bargain month,' January, this: *What is the best way to get rid of old stock?*

"My practice has been opposed to the rule laid down by my friend, Lorgnette, yonder. He tells me that he don't let any stock get 'old'; that at the first indication of waning demand for any 'fad' thing, or soon as any pattern of a staple article is ignored by the public, that 'fad' thing, or that poor pattern of a staple, is reduced in price, and the clerks are instructed to keep the article constantly in notice of customers—to force the sale of it and *make* it go. My theory is that the buyer, in such case, is generally dissatisfied when she gets home; she came to buy the newest thing, or a good pattern, and thinks afterward that she was prevailed upon by a good salesman to take what she didn't want; and her good will to that store is weakened. Instead, I never try to 'push' an undesirable thing, but let the public have what it wants; waiting for the month of January to make a clearance of the whole year's accumulations of slow stock. These things I then put out on a table by themselves, and advertise 'My January Bargain Counter'; and I give my window over to them for one week. I put big tags on each, with the regular and reduced price thereon; and I don't stop at a *small* reduction, but cut the price squarely in two in many instances. The whole trick of disposing of old stock is in the bargain price, and convincing buyers that the bargains are *really* bargains; but you must not go gingerly about cutting, else your claim is a false pretense. The buyer goes to this counter and selects on her own judgment; the only argument brought to bear on the sale is the price-fact; my clerks are cautioned not to deflect the intent of the buyer, if she wants to buy new goods. The average woman is a bargain hunter, and the bargain counter, with its big tags, plainly indicating the 'before and after' prices, always

solves the problem of old stock for me. If any piece is slow then, I split the *reduced* price. I don't hesitate to take whatever loss is necessary to clear the whole collection within the month."

Louis Lorgnette: "But by waiting until January for one special occasion of stock clearance, your stock is scarred here and there for six or eight months with undesirable things, which stand in the eye of the buyer and prejudice her against the stock as a whole. Your bad things are taking from the favorable impression which your good things are making. Your stock isn't 'clean,' except for a couple of months after January 31st. Besides, you are not getting the use of the money that is invested in this bad stuff until nearly a year has passed. What do *you* say, Mr. Silverplate—whose plan is better, Mr. Hairspring's or mine?"

"Well," replied Silverplate, "I presume I am something of an old foggy, but I should say that neither of you is right. It may be a pleasant thing to know that every few months, as in Lorgnette's case, or once a year, as in Hairspring's case, every piece of stock in the store is new; but it seems to me you two pay too much for that satisfaction. I don't see the necessity of taking these frequent losses in clearance sales. My own experience is that some one, at some time, will buy the 'bad' thing. Why, last week I sold, at a profit, mind you, a silver-plated urn that I had in stock for thirty-seven years! And —"

(Mr. Goldskin interrupted to say, "Some plated-ware made in these times would bleach to the base metal, on the shelf, in half that time!")

"And the customer was delighted at her 'find,' as she called it," continued Silverplate.

"Oh, say, this fear of taking a loss for one's bad judgment in buying makes me tired," chimed in Hi. Hustler. "If you intend selling your goods as antiques, all right and proper; but you must get a lot of money for them, to cover interest, and wait until you are gray as Mr. Silverplate, in that case. Say that you lose \$100 a year in cleaning out the accumulations, what of it? What does it amount to, against your store's reputation for up-to-dateness? We haven't heard from Mr. Pennyweight; what is *your* practice?"

"I have tried out all the plans that have been proposed here. In my early years I held on to the old stuff, reluctant to take a loss, and hoping for the ultimate buyer, as Mr. Silverplate does; later I went to the other extreme of Mr. Lorgnette—forcing out all slow goods about every four months, and now I've settled definitely on the same scheme as Mr. Hairspring's—once-a-year clearance—with a modification in the detail.

(Continued on page 24)

The Proceedings of the Main-spring Club

(Continued from page 23)

I separate the slow things from the good stock, put it on a counter, and in the window, as he does; but instead of the tag, with 'before and after' prices, I put on each article a big tag with the regular price at top, then *each day* I lop off 5 per cent. of the price, and let the successive reductions show on the tag; and I put a card in the window stating that the prices on this assortment will be daily reduced 5 per cent. until sold. It isn't an original idea with me, but it is a good one, as results show. My old things 'go' at *some* price long before the 100 per cent. discount is reached!"

"Of course — of course," muttered Johnny Jumpup. "Them wimmin folks is all nat'ral gamblers, and they fall over themselves when it gits around 30 per cent. for fear the chanct will be gone and another missus gobbles the goods!"

(TO BE CONTINUED)

January Advertisements

THERE are a few occasions when the public accepts in good faith and "sweet reasonableness" an advertised offer to sell goods at less than "proper" prices. The world of buyers has grown wary of the "bankrupt sale" and the "fire underwriter's sale" of the fly-by-night fakir; and even the legitimate merchant finds need, in these days, of justifying ground for his cut-price sale, else his appeal will fall on deaf ears. But an "after Christmas" sale, to unload the unsold novelties and the excess stock, is such an occasion; propriety of the cut-price offer, at this time, appeals to the judgment of the matter-of-fact, and to the reason of the can't-be-fooled; and so, by general consent and practice, January has come to be universally recognized as "bargain time."

The following suggestions for advertisements are based on the "bargain" idea. Conjointly with their appearance in the newspaper the window must be appropriately

One, Two, Three—

and
Away
They
Go!

We have quoted Shakespeare to the laggard Christmas Novelists: "Stand not upon the order of your going, but go at once!" Cost Price is making faces at the Selling Figure, and we are disrespectful even to Cost Price! Here is great picking for the smart ones who have an eye to other Christmases or to intervening birthdays. An expert lately threw a silver dollar across the Potomac, and remarked, "A dollar goes far these days." Bring your dollar to our store, and you can throw it over an Atlantic Ocean of values!

dressed, as described on page 25. The window, as an "object lesson," will powerfully supplement the printed advertisement on this occasion.

The Buying Whim—and a Result

Every Christmas season has its surprises, to the Man Behind the Counter; and in this season the surprise was the demand for Ebony Military Brushes. We ordered, and reordered of the manufacturers, and still came the cry for more; until it seemed to us that every male head in Smithville must be slicked to the last degree of brushing! Our last order went astray, and the goods arrived day after Christmas; so that we now have 12 pairs of these beautiful Brushes, which are to be sold, with miscellaneous other attractive Christmas goods, at 25 per cent. reduction.

If you know a "nice young man," not entirely bald, who has not yet been supplied with the current Smithville fad, now's your time!

The after-holiday sale is not only an opportunity to get rid of surplus holiday stock, but of older accumulations. As before

In our window we show the following left-overs, bought specially for the Christmas trade:

- 3 Fancy Clocks
- 19 Silver Novelties
- 31 Pieces of Jewelry
- 4 Ornamented Watches

Their quality and beauty have not deteriorated in the week-interval, but their prices—whew! No need of our knocking all the profit off of them, for there will be weddings and birthdays and all sorts of occasions to market them; but we want to celebrate our biggest Christmas season by showing a clean sweep of all the Christmas goods, even if we have to pay you for your assistance in enabling us to celebrate. Come!

said, there is a logical reason for a January cheap sale that safeguards the reputation of the store, whereas such a sale at an illogical

WE DO NOT HAVE ANY

Ten-Dollar Gold Brooches for One-Ninety-Eight

but we have some \$6.00 ones which we have marked for quick selling at \$3.75, and some higher, some lower, at same ratio of reduction. How? Why? Well, our buyer got excited over the "run" on our stock of Brooches, before Christmas, and seemed to forget that Smithville's population was *not* a million and all women; and he ordered too many—about 35 too many. 35 Smithville women will rejoice in his blunder; and the thirty-sixth one will lament that she waited too long to seize the chance.

There never were as fine Brooches, as new, and as up-to-date, offered for as little money. Will you be one of the 35 wise ones?

time might be interpreted unfavorably to the jeweler's business. While the general public are probably no more economic than they

ever were and may be even more liberal, they show greater judgment in buying and manifest a discriminating intelligence, which must

One Dollar for Seventy-Five Cents!

Just as good, and as fresh-looking, as on December 24th, but Christmas is past and these remainders are marked for quick selling.

Why not give a Christmas gift to yourself?

You never had the opportunity to get so much for so little as here, and now. Come see us.

Money-Making Time for The Thrifty Buyer!

be taken into account. It is safer to credit the public of to-day with over-distrust than over-credulity.

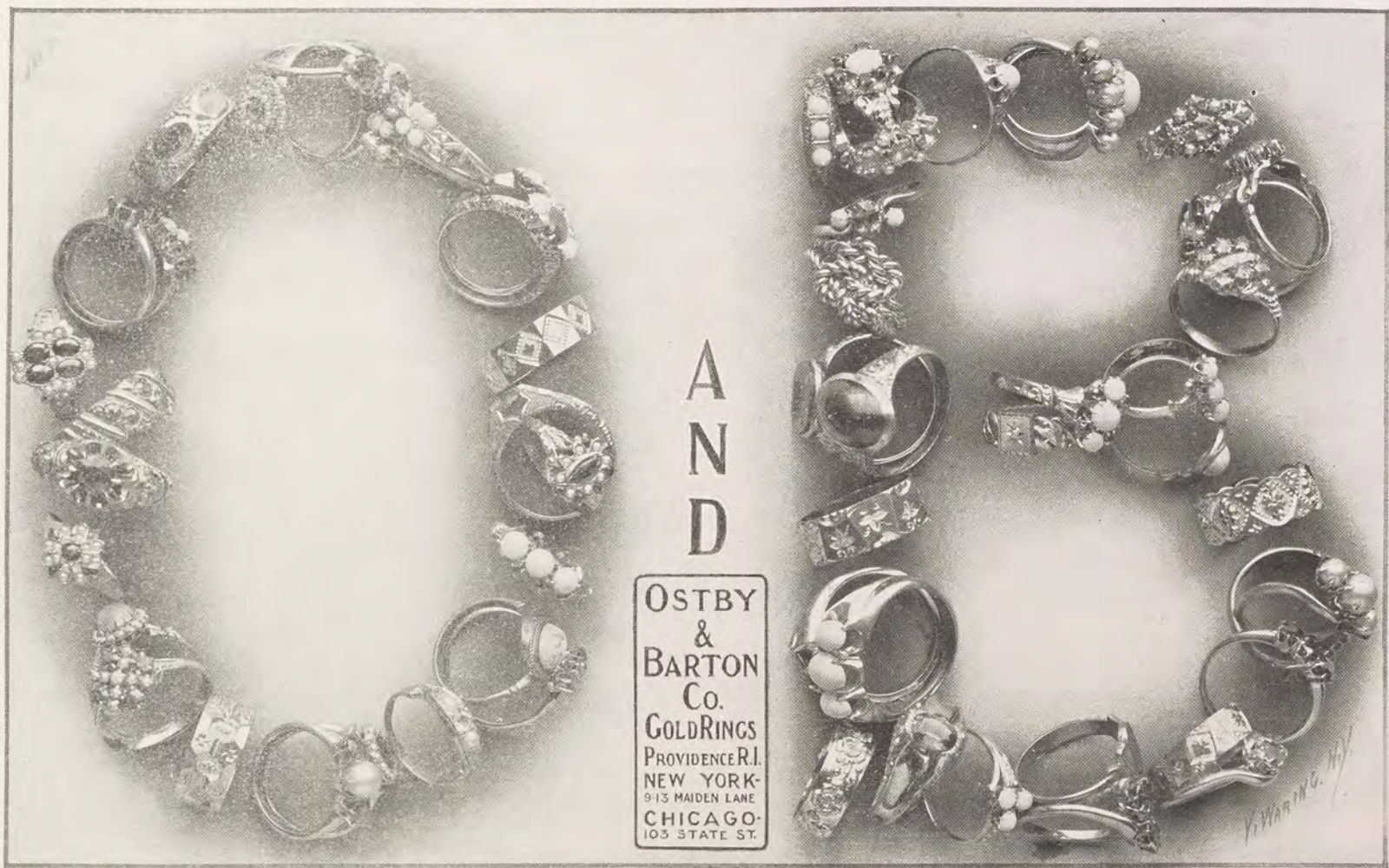
"By This Sign We Conquer"

January is house-cleaning time with us. Everything in our stock that has been here one year, or that is no longer a current fad, or that in any way gives us an excuse for sacrificing it, is now "marked for slaughter." We are willing to take a substantial loss this month in order to vindicate our reputation for always showing "the cleanest and most up-to-date stock in town." Here's a chance for money-making at our expense. We have made reductions of 10 per cent., 25 per cent., 50 per cent., from the prices asked two weeks ago. Not on *all* goods, mind you; but on hundreds of pieces that you want and need.

In this house-cleaning sale we have made prices that Smithville never saw before—and will not see again until our annual sweeping-out a year from now. And back of every piece of goods stands the Smith guarantee. It is worth a look, anyway.

An Imperative After-Holiday Duty

There is one post-holiday duty which no merchant who expects to succeed can neglect, and that is making such a careful inventory of stock as will thoroughly inform him as to his exact condition. Without this fundamental knowledge he cannot proceed intelligently on a new year's operations, and persistent neglect of this essential of modern stock-keeping can only lead to ultimate disaster. It may be a surprise to our readers, but it is nevertheless true, that the monster Wana-maker establishment in this city can take stock in *one night*! This is due to a system so thorough that stock is practically taken all the time.



A
N
D

OSTBY
&
BARTON
Co.
GOLD RINGS
PROVIDENCE R.I.
NEW YORK-
9-13 MAIDEN LANE
CHICAGO-
103 STATE ST.

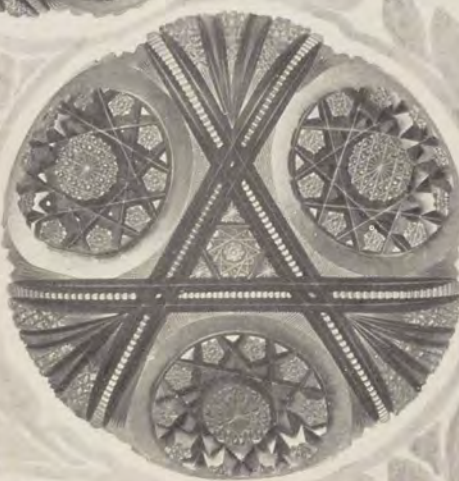
V. Waring, N.Y.

PITKIN & BROOKS

MANUFACTURERS OF

RICH CUT GLASS

CHICAGO



GLORIA PATTERN

CARAFE	EACH	\$ 10.00
CELERY TRAY	"	9.00
Nº 63 BONBON 7" INCH	EACH	6.00

GLORIA PATTERN

BERRY NAPPY 7" INCH	EACH	\$ 7.00
"	8 "	8.75
"	9 "	10.00

Factory—Meriden, Conn.

The Bergen Co.
38
Murray Street
New York
Manufacturers of

American Cut Glass



"GLENWOOD"

No. 1000. 9-inch Vase.
No. 1001. 12 " "

If your stock is depleted after the holiday trade, owing to the unusual demand made upon it at this season of the year, we wish to say we are going to be in splendid shape to take care of your orders, because we do not intend to shut down our factory January 1st to make our usual annual repairs.

During the month of January we will be able to show some of the many new things which we intend to bring out this year, and can promise our customers that we shall **lead the market** as hertofore in the matter of

Prices, New Shapes and Designs
in

BERGEN CUT GLASS

Electros free for advertising

Send for Catalogue No. 25

TRADE "1835" MARK
R-WALLACE



Practice Makes Perfect

That is why the "1835—R. Wallace" plate stands alone in quality and its peculiar richness of design. Our practice began in the year 1835, and now enables us to make plated ware of the utmost perfection. Moreover, there is no confusion about this brand as there is but one Wallace stamp on silver-plated ware, and that stamp is an absolute guaranty of quality.

R. WALLACE & SONS MFG. CO.

FACTORIES—WALLINGFORD, CONN.

BRANCHES

New York Chicago San Francisco London

Stone Rings Sold by Weight!

It Will Pay You, Mr. Jeweler, to buy your stone rings by weight. You have been buying your plain rings this way for years, and are familiar with the benefits of the method. We now propose to extend the principle to GYPSY RINGS, illustrated herewith. These rings are warranted 10 K. gold. The stones are genuine Doublets—not glass. The mountings are hand-made—not cast—are made, in fact, like the expensive Tiffany mountings.



PRICE, 85 CTS. A DWT. 3 per cent. off for cash or net 30 days.

THESE ARE OUR ONLY TERMS.

These rings cannot be duplicated for anywhere near the price we offer them, under our new method. We invite comparison in Quality and Price with goods sold under the old system. ORDER AT ONCE.

L. W. RUBENSTEIN

These are but a few samples of the 200 different patterns we are offering.

54 Maiden Lane
NEW YORK



905. In all colored stones. Avg. weight, 31 dwt. per doz. In select fiery Opals, \$4.00 ring complete.



909. In all colored stones. Avg. weight, 38 dwt. per doz.



979. In all colored stones. Avg. weight, 38 dwt. per doz.



902. In all colored stones. Avg. weight, 48 dwt. per doz. In select fiery Opal, \$6.25 ring complete.



900. In all colored stones. Avg. weight, 27½ dwt. per doz. In select fiery Opals, \$3.60 ring complete.



906. In all colored stones. Avg. weight, 32 dwt. per doz.



954. In all colored stones. Avg. weight, 39 dwt. per doz. In select fiery Opal, \$5.00 ring complete.



910. In all colored stones. Avg. weight, 42 dwt. per doz.



908. In all colored stones. Avg. weight, 30 dwt. per doz.



903. In all colored stones. Avg. weight, 48 dwt. per doz. In fiery Opal, \$6.25 each.



901. In all colored stones. Avg. weight, 27½ dwt. per doz.



907. In all colored stones. Avg. weight, 44 dwt. per doz. In select fiery Opals, \$6.00 ring complete.



904. In all colored stones. Avg. weight, 32 dwt. per doz. In select fiery Opal, \$6.60 ring complete.



965. In all colored stones. Avg. weight, 49 dwt. per doz. In select fiery Opals, \$6.25 ring complete.



967. In all colored stones. Avg. weight, 40 dwt. per doz. In select fiery Opals, \$6.00 ring complete.

X
TRADE-MARK.

"THE GEM TURQUOISE"

PRODUCT OF THE MINES OF THE

GEM TURQUOISE AND COPPER CO.

MINES SITUATED IN GRANT COUNTY, NEW MEXICO.

A. K. SLOAN,
President

ALFRED KROWER,
Vice-President

FRANK T. SLOAN,
Secretary

FRANK SQUIER,
General Manager

These Turquoises are the finest in the world, exceptionally hard, possess the most beautiful true Turquoise blue color and are absolutely durable.

All goods cut to standard sizes and shapes. The Turquoise matrix are handsomely marked.

WE GUARANTEE EVERY STONE
PURCHASER BY OUR

X
TRADE-MARK.

WE SELL, PROTECTING THE
TRADE-MARK

BRANCH OFFICE
167 Weybosset Street, Providence, R. I.

ALBERT LORSCH & CO., 37-39 Maiden Lane, New York

SOLE SELLING AGENTS FOR THE U. S., DEPENDENCIES AND CANADA

HENRY E. OPPENHEIMER & CO.

12 Maiden Lane, New York

1, 2, 3 Holborn Circus, London

SOLE SELLING AGENTS FOR FOREIGN COUNTRIES

X
TRADE-MARK.

X
TRADE-MARK.

A WORD ABOUT THE POPULARITY OF

Gilt Novelties

Last season our finish was so much admired and we were so badly over-ordered that for the fall of 1901 we made special preparations in midsummer. We enlarged our equipment for turning out gold-plated Clocks. We prepared to take care of three times the amount of business we formerly handled in this line. At the same time we prepared several thousand circulars illustrating these goods, and expected to distribute those circulars this fall. From the very moment we started the entire new equipment our orders so increased that we were never able to overtake them, to say nothing of getting a single clock to put into stock. All were shipped direct from the finishing room after inspection. Hence we dared not send out a single circular. We have those circulars still, and shall be glad to send one to any jeweler who applies.

NEW HAVEN CLOCK CO.

New Ideas in Watches

THE LADY CLARE

A thoroughly reliable lady's watch.
Quick beat high-grade movement.

THE ANGELUS

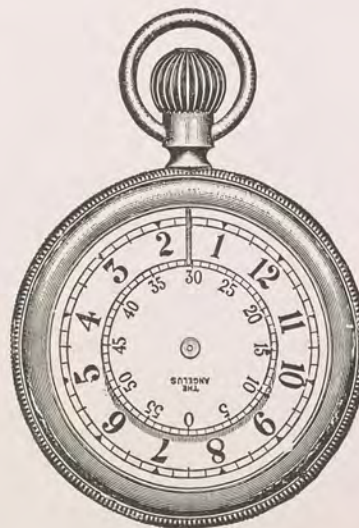
A watch without hands.
The dream of the railroad man finally realized.
A novelty that is having the most phenomenal sales.

BOTH THESE WATCHES ARE
STEM-WIND AND STEM-SET.



Exact size.

THE LADY CLARE.



Exact size.

THE ANGELUS.

They are finished in Nickel, Gilt or Gun Metal as you elect, and we equip you with advertising material.

DON'T FORGET EITHER THE OLD FAVORITE, THE NUMBER 30.

The Smallest Low-Priced Gentleman's Watch.

Ask your jobber or address

WATCH DEPARTMENT

of the

NEW HAVEN CLOCK CO., New Haven, Conn.



The lesson-in-chief of 1901 was taught by the developments in the filled screw case field. The trade will recall—many of them to their sorrow—the reckless cutting of quality by certain manufacturers who seemed bent on finding out just how little gold could be put in a screw case while leaving to it the appearance of a filled case. As these cases were intended to be sold at whatever they would bring, and were so made as to ensure a profit to the manufacturer at any price, the jewelers who were induced to handle them were the chief victims.

The situation at that time brought about the boldest step ever taken in the interest of the trade and of honesty. Though **Jas. BOSS screw cases** always represented the standard of quality in this grade, we increased the thickness of gold in the case and the price just enough to cover the cost of the added gold. The result is as creditable to the trade and public as to our judgment. **Jas. BOSS screw cases** are to-day the one make that have the confidence of the entire trade. While we regret the unpleasant experience of those who were deluded into handling the cut-quality goods, the lesson should be a warning.

We have now ready a great number of entirely new patterns in the **BOSS screw cases** in both the 14 K. and 10 K. grades. It will pay you to remember them at this replenishing time.

The Keystone Watch Case Co.

19th and Brown Sts., Philadelphia, Pa.

HOLIDAY TRADE POINTERS



In a year of overflowing prosperity, such as 1901, there would naturally be an unusual demand for solid gold watch cases. This **WE** anticipated and were prepared for. And our liberal preparation proved most fortunate, for the actual holiday demand for



KEYSTONE Solid Gold Cases

far surpassed our most sanguine expectations. The lesson is one to keep in mind, for even the increased prosperity does not quite explain it. It evidences, on the part of the public, not only wealth, but a sound judgment, critical taste and a preference for merit that means much for the jeweler.



It is a business duty for **YOU** to cultivate this buying trend, and a tempting stock of the new **KEYSTONE Solid Gold** cases is one of the means to this end.

Novelty, richness and beauty are the ideal good times combination in holiday stock. This is well evidenced in the wonderful expansion in the demand for the handsome new patterns of

KEYSTONE Sterling Silver Cases with Niello Ornamentation

Even at the beginning of the past year the **NIELLO** cases had proved their right to a place in staple stock, and the sales in the interim have so spread their fame that they cannot fail to prove one of the most popular and profitable lines during the ensuing year.

We have now in course of preparation a large number of new patterns—novel, varied and artistic—which will still further add to their popularity.



The Keystone Watch Case Co.

19th and Brown Sts., Philadelphia, Pa.

CORNERING THE RING MARKET



We are going to corner the ring market! Not the way a speculator corners wheat or corn—bless you, no! So don't get nervous. We're going to "corner" it with lower left-hand corners of these pages—in the same sense that one might "post" the country with "one" or "two-sheet" posters. On?

We've got a brand-new RING PROPOSITION which we want to bring before those of the 20,000 Jewelers in this country, who are as yet unfamiliar with our line, individually and—simultaneously. Want to talk to everybody at once—want everyone to have an equal advantage, understand? The biggest staff of travelers couldn't do this, but the little left-hand corners can, we are sure. The proposition pertains to our high-grade Rings which for design, workmanship and finish are distinctive among the many makes now on the market.



CUT OFF THE CORNER—Mail to us and the proposition will be laid before you at once.

Louis Kaufman & Co

RING MAKERS

K
Jan.

Send us
AT ONCE
Your Special
RING PROPOSITION

We want to know about it.

NAME _____

ADDRESS _____

OFFICE
54 Maiden Lane
New York

FACTORY
Brooklyn, N. Y.

THE SHOW WINDOW

AT this season of new departure and innovation it behooves those jewelers who have so far been apathetic in the matter to take into consideration the trade-making possibilities of their store windows. Persistently and forcefully as THE KEYSTONE has extolled the advertising value of the show window, there are still those who seem to think that the sole purpose of the window is to admit light. While it is true that some goods are displayed, the very monotony of the window's appearance and the perennial sameness of the stock shown convey an idea of inactivity and unprogressiveness that repel rather than attract the thinking and reasoning public of to-day. Apparently the same ring tray is in the same place all the year, and while the contents may be changed frequently enough, there is no effort made to impress the fact on the public. In time the passers-by take no more notice of the familiar display than a sleeper does of the tick-tick of his bed-room clock. The survival of the fittest holds good in business as in biology, and the jeweler who ignores window advertising in this twentieth century is courting the fate of the unfit.

Suggestion for a January Window

Get a carpenter to make a gigantic wooden carving-knife, nearly as long as your window is wide. Have him take some pains to have its form and shape exactly right—an enlarged copy of the standard carver, with a duplication of its knotty buck-horn handle and curved tip. Cover the blade with silver foil, and paint the handle black.

Gather together all the "slow" goods in your stock, all that are soiled from handling or dull from age, all the "fad" things whose popularity has passed, all the novelties whose attractiveness disappeared with the special occasion for which they were bought; group these *incongruously*, instead of with an eye to harmony, on the floor of the window, after tagging them as hereinafter described.

Suspend the gigantic carving-knife from the ceiling of the window, so that it hangs horizontally, edge down, on a plane with the sidewalk-observers' eyes. The blade is to be placed in the slit of a large foot-square card, as if it had cut the card; and this card is to be inscribed, "The Regular Price."

Put a large tag on each piece of goods, with the regular price in black ink, and a scissors-cut through that price; below, in red ink, put the reduced price. For the advertising value of a side object-lesson, mark some of these things, of least value, at a *ridiculous* cut; thus, on a tarnished, out-of-date belt buckle, which all the women of your town have heretofore turned down contemptuously, the tag might show:

Regular Price, \$1.00
Good-bye Price, .10

A half dozen such examples, scattered here and there among the collection, would pique curiosity into an examination of all of them; and that is the main thing to be accomplished, if your prices make the goods *real* bargains. No use to make the effort at clearance if you are timid in cutting; set your teeth and slash away remorselessly, and your end will be attained.

If you get large enough tags you will have room on them for some such comments as these:

On a plated article in which the plating has worn through, or plating was defective: "Beauty is but Skin Deep."

On an out-of-date style of bracelet: "Times Change, and Manners with the Times."

On a "slow" lot of back-combs: "Not Interesting to Bald Ladies."

On an old, shelf-worn mantel clock: "Time will fly when prodded with this price."

On a ladies' ancient key-winding watch: "Better than many in my or any jeweler's stock at 50 per cent. higher price."

On some *passe* patterns of men's vest chains: "All wrong as to fashion, but all right as to quality. Are you stuck on being in style, and willing to pay for it?"

On a half dozen out-of-date rings: "These were once thought beautiful. Their beauty now is in their price."

On a soiled bisque figure: "Once I, too, was pure as the Beautiful Snow."

On a discontinued line of watches: "Cheaper than missing the train."

On a trayful of Christmas novelties: "We've had our whack at Christmas—here go some of our profits."

These are only typical; the idea can be developed indefinitely, according to the articles displayed in each individual instance. Keep in mind that to create confidence in the observer at the bargain-window it is necessary to be perfectly frank in stating undesirability. You may tell all that is *good* in the thing, but you should not gloss over its *bad* features—and let the price be the argument.

Advertising Window Displays

So important has the window become in modern merchandising that those who make proper use of it find that it pays to advertise special displays. One such advertisement is here reproduced:



This display, which is referred to on another page, was well worth going to see, being one of the attractions of the town during its continuance. Enterprise of this character should be an object lesson to less progressive jewelers at this season of new resolves.

The Dinner Table Display

A display well adapted for the jewelers' purposes, especially around festal seasons, such as Christmas, Thanksgiving, Easter, and in fact all the year round, is the dining table with immaculate linen, shining silverware and sparkling cut glass. A well-set dinner table is always agreeable to look at, and shows the goods in a very attractive and impressive manner. Especially after dark the lights, in conjunction with the lamp or lamps on the table, may be made to show the goods to most advantage. To make this display effective a window of considerable dimensions is necessary. Care should be taken that the table is set in accordance with the exactions of twentieth century etiquette, for any lapse in this regard is liable to be adversely criticized. This is one of the instances when the daughters of the house will be found most helpful.





STOCK-TAKING

is now in order. We trust it will find the stock in the hands of the Jewelers very light—the sequence of a good holiday trade. After stock-taking come orders to fill in goods needed.

We have a large stock of

FRESH GOODS OF THE LATEST DESIGNS

to meet these needs of the Jeweler. Our travelers are starting out with the manufacturers' New Spring Lines. Write us your needs, and if our traveler cannot call on you soon, we will attend to your wishes direct.

We make a specialty of **Diamonds and Watches.**

Headquarters for Waltham, Elgin and New England Movements in an endless variety of cases, from the most plain and inexpensive, to the best examples of artistic decoration in gold and jeweled work.

N. S. White & Co.
21 Maiden Lane

New York.



News Letters

From Staff Correspondents



New York Letter

A Time of Prosperity and Promise

It is unnecessary to say that the wholesale trade are well pleased with the results of the past year's business. Never, indeed, in the history of the country have all branches of the jewelry business been in a healthier or more robust condition than at this opening of 1902, and, as far as can now be foreseen at this early date, prospects for the present year are equally bright. The prosperity of the nation was well evidenced last year in the demand for a high quality of stock, and retailers were unusually discriminating in their purchases. As the holiday trade is reported as good in all sections, after-holiday collections promise to be satisfactory, and it is likely that the number of failures will be comparatively few. Under prevailing conditions it is a joy, indeed, to "ring out the old and ring in the new."

Annual Stock-Taking

The last weeks of the year are dreaded by those engaged in the material business, especially in the large houses that carry big stocks, for it means stock-taking, with all its disagreeable features. When it is considered that every single little piece of material, every tiny screw, jewel, staff, etc., must be counted, sorted and freshly packed, a faint idea may be gained of what work the annual stock-taking means. In the big houses the task is begun early in December, and often it lasts well into January before the final figures are compiled. Often it entails working late in the evening, for the usual daily routine must be carried on at the same time. All hands heave a welcome sigh of relief when it is all over.

The Board of Trade Banquet

As January 14th, the date for the holding of the third annual banquet of the Jewelers' Association and Board of Trade, draws nigh, the executive committee, in whose hands the arrangements for the coming reunion are vested, are exerting themselves with unusual activity, and at present the indications are that the forthcoming festivities will equal, if not surpass, any yet held. The rendezvous this year will be Sherry's, and tickets are limited to the number of 500, although on the last occasion 600 guests were entertained. The different committees in charge of the arrangements, with the chairman of each, are: Banquet committee, Augustus Sloan; printing and souvenir committee, George W. Street; speakers' committee, Seth E. Thomas; reception committee, Oliver G. Fessenden.

Material Houses Prosperous

In this market no branch of the trade has had a more prosperous business in 1901 than the material houses, if outward signs count for anything. Several of the firms in this city have made marked improvements in their quarters to facilitate a better handling of increasing trade, mention of which has already been made in this correspondence. Speaking of the year's business as it wound up, H. B. Peters, of H. B. Peters & Co., states that it has been the best in the firm's history, and showed a splendid

increase over the previous year. Mr. Peters said he would soon have to follow the example of the others and spread out, as he finds his present quarters somewhat limited in view of the later demands of his business.

Mainsprings Advanced in Price

A notice of an advance in the price of what are known as "standard" brands of mainsprings was sent out last month by the American Waltham Watch Company. The notice affects about fifty-seven different well-known brands, including those having the largest sales in this country. It is said to have been made necessary by the increase in cost of material and construction, and also in the desire to keep the quality up to the maximum for this grade of springs. The raise will probably lead to charging the retailer a higher price for many brands that have been selling really below their market value.

Meeting of the Jewelers' League

The regular monthly meeting of the executive committee of the Jewelers' League was held at the league office, December 6th. There were present: President Hayes, Vice-Presidents Greason, Street, Fessenden and Karsch, Chairman Van Deventer, Messrs. Lissauer, Wormser and Bliss and Secretary Stevens. The minutes of the previous meeting were read and approved. The report of the treasurer was read and approved. The following applicants were admitted to membership: W. A. Hopkins, Providence, R. I., recommended by Geo. W. Parks and L. A. Miller; W. T. Lewis, New York, recommended by Alfred Meyer and L. A. Miller; A. B. Tuthill, Brooklyn, N. Y., recommended by Alex. C. Chase and L. A. Miller; E. Jaccard, New York, recommended by L. J. Jaccard and L. A. Miller; D. W. Fletcher, New York, recommended by L. A. Miller. The next meeting will be held January 3, 1902.

A Destructive Fire

The big plant of the Dennison Mfg. Company at 198 Broadway, was entirely destroyed by fire in the early morning of December 9th. The fire was discovered by William Thompson, a negro porter of the premises adjoining. At that time, 1.30 A. M., the fire had probably been burning for some time, and it was not until the firemen opened an iron shutter in the second story that they learned how serious the situation was. Chief Croker arrived early on the scene and immediately turned in two more alarms, which brought large reinforcements of firemen along with the big water tower. The immense stock of paper in the building caused a furiously hot fire, and the whole lower part of the city was lit up. The firemen had hard work to confine the fire to the Dennison Building, as it several times threatened to spread both north and south. No one was injured, but Captain Clark, the hero of the Windsor Hotel fire, was caught with several men by a back draft while fighting the fire on one of the upper floors, and they narrowly escaped by dropping their hose and running for their lives. Later in the morning, while working in the ruins, a fireman fell through the roof to the second floor of the building, and was taken to the hospital suffering from shock. The Dennison Company's loss is esti-

mated at \$150,000 to \$200,000, said to be covered by insurance. Happening just at the time it did, the fire caused considerable inconvenience in the trade, as almost every house on the Lane had in orders for boxes or supplies of some kind. Happily, the large orders which the firm had to fill for the jewelry trade had all previously been delivered, and therefore no one suffered very seriously. Numerous make-shifts were adopted until supplies could be obtained in other quarters. Besides the Dennison Company, Adolph Alexander, a jeweler in the adjoining building, suffered damage, principally from water.

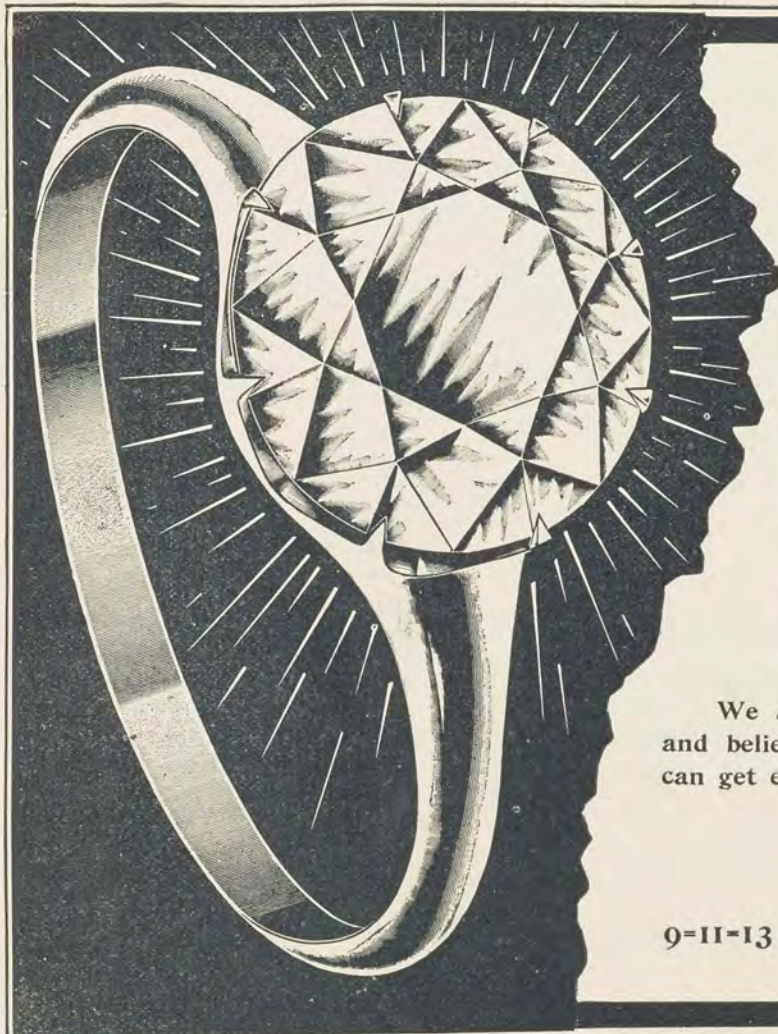
Rapid Baggage Express Inaugurated

The Metropolitan Street Railway Company, of New York, has inaugurated a regular express service, which it will extend to all lines except the Broadway. The old mail cars, which were used on the Third Avenue road, have been converted into freight cars of the box type, and will be used for the service. Only four cars were put into service at first, and they were run entirely over the Eighth Avenue line, but the officials of the Metropolitan Express Company, as the new organization is termed, will shortly run ten additional cars over the Madison and Sixth Avenue lines. Receiving offices will be opened in all parts of the city. The plan of the company is to divide the city into districts with receiving offices in each; baggage left at these places will be carried by automobiles to the nearest depot and there transferred to the express cars.

Seeks \$100,000 Damages

Joseph Zilver, formerly president of the National Diamond Cutting Company, of Manhattan, has begun suit before Justice Marean, in the Supreme Court, Brooklyn, against Herbert S. Cooper, vice-president of the company, for \$100,000 for defamation of character, in that Cooper said he had stolen diamonds from the company while its president. In his defense Cooper declares that he said what he did in the line of his duty as an officer of the company. Cooper declares that the company employed a great many men, who handled about \$1,000,000 worth of diamonds a year, that he learned that Zilver compelled the men to pay for lost diamonds, but that there was no record made of this payment. On investigation, he alleges, he found that from 4 to 6 per cent. of the finished diamonds were unaccounted for. On more than one occasion, he alleges, Zilver has stood by and seen one of his relatives take uncut stones from the case and make no record. He reported to Henry S. Oppenheimer, the treasurer, and to his uncle, Henry Oppenheimer, who reported to the board of directors. At the meeting of the directors he charged Zilver with these things, but at no time since nor to any one else has he spoken of the matter.

The New York Museum of Natural History put on exhibition last month, in honor of the founder of the institution, the superb collection of gems given to the museum by J. Pierpont Morgan. The collection includes that made by Clarence S. Bement, of Philadelphia, with the famous Tiffany gem exhibit at the Paris Expositions of 1889 and 1900.



1902

We wish you a very prosperous New Year, and show you a way to make it so:

The "Scott" System of Grading Diamonds will win and hold for you the best trade of your locality, because each diamond we sell is very carefully graded and marked with a letter or number to indicate the quality. This gives you the benefit of our judgment.

Our system of grading diamonds enables you to guarantee a stone in a way that will inspire your customer with as much confidence as if he had bought from the very largest dealer.

We are pleased to place our goods in competition with others, and believe we can give you better value for the money than you can get elsewhere. Try us when you have a prospective sale.

S. C. SCOTT MFG. CO.

9-11-13 Maiden Lane

New York City

Our Big 5 WATCH SPECIALS

- size Solid 14 K. Gold hunting, engraved or engine-turned, with Genuine American Elgin or Waltham movements, at \$26.10, Keystone list.
 - 10 Year Filled, 16 size (hunting case only), with seven jeweled Genuine American Advance movements, at \$11.20, Keystone list.
 - 20 Year, 16 size (hunting case only), with seven jeweled Genuine American Advance movements, at \$16.00, Keystone list.
 - 10 Year Filled, O size hunting case, with Genuine American Cambridge movements, at \$9.20, Keystone list.
 - size Solid Silver open-face, plain polished, with Genuine American Cornell movements (with second hands), at \$8.10, Keystone list.
- Our supply being very limited, we cannot accept orders for more than one dozen of each from any one purchaser. Compare our prices. THAT'S ALL!

Headquarters for
Watchmakers and Jewelers
Entire Requirements

Yours for WATCH BARGAINS
Rosenzweig Bros.
52 Maiden Lane, NEW YORK

GOLD MEDAL

PAN-AMERICAN EXPOSITION
1901

THE E. HOWARD CLOCK COMPANY

MAKERS OF

WATCHES **E. HOWARD & CO.** BOSTON **CLOCKS**
TRADE-MARK
ESTABLISHED 1842

403 WASHINGTON ST. BOSTON

41 MAIDEN LANE, NEW YORK

Eliassof Bros. & Co.

A LARGE ASSORTMENT OF DIAMOND MOUNTED JEWELRY CARRIED IN STOCK

IMPORTERS
AND
JOBBER OF

**Diamonds
Watches
Jewelry**

9-11-13 Maiden Lane
NEW YORK

62-64 State St.
ALBANY, N. Y.

SEND FOR
CATALOGUE
OF
MASONIC
AND OTHER
SECRET SOCIETY
CHARMS, JEWELS,
RINGS, BADGES
AND
LAPEL BUTTONS

SEND FOR
CATALOGUE
OF
COLLEGE BADGES
CLASS PINS
AND
SCHOOL MEDALS

The C. G. Braxmar Co.
Manufacturing Jewelers
NO 10 MAIDEN LANE
NEW YORK.
BADGES & MEDALS
A SPECIALTY.

SEND FOR
CATALOGUE
OF
MILITARY
G. A. R.
ATHLETIC,
SHOOTING
AND
SPORTING MEDALS

SEND FOR
CATALOGUE
OF
FIRE AND POLICE
DEPARTMENT
AND
OTHER
OFFICIAL BADGES

New York Letter

(Continued from page 27)

Low Rates to New York

The Trunk Line Association has granted the usual rates to the Merchants' Association of New York for the spring buying season. The association has also agreed to concur and participate in the rates which may be made from other railroad territories throughout the United States. The trunk lines cover the territory from the New England border west to Buffalo, Pittsburg and Wheeling, W. Va., and south to Baltimore and Washington and the line of the Potomac River. The dates from trunk-line territory on which the rates will be in effect are March 15th to 20th, inclusive, and April 4th to 7th, inclusive, with a return limit of fifteen days from date of sale, the rate of fare being one and one-third fare for the round trip; the general terms and conditions governing the rates to be the same as those which have been in effect on previous occasions. The Central Passenger Association has also agreed to grant reduced rates from the Central Passenger Association territory. The rate will be a fare and a third from February 13th to 17th, inclusive, and from March 1st to 4th, inclusive, with a return limit of 30 days. The territory covers all that part of the country west of Buffalo, Pittsburg and Wheeling, extending to the Mississippi River, including St. Louis and Chicago, south to the Ohio River and part of Kentucky. The Central Passenger Association has agreed also to honor tickets at the same rate from the territory of the Southwestern Passenger Bureau, including Texas, Indian Territory and Oklahoma, on March 15th to 20th and on April 4th to 7th, with a 15-day return limit. The lines forming the Southwestern Passenger Bureau will not meet until the second Wednesday in January, at which time the application for rates from the territory over which they have jurisdiction will come up for action. Application will also be made to the Western Passenger Association, which has jurisdiction over that section of the country west of Chicago and northwest of St. Louis, for the same dates from its territory.

McKinley Memorial

The movement in connection with the McKinley memorial is meeting with much success among the New York jewelers. At the request of Leopold Stern, of Stern Bros. & Co., a representative gathering assembled some weeks ago at the Astor House for the purpose of organizing a committee to co-operate with the McKinley National Memorial Association in raising funds for the erection of a monument befitting the memory of the late Chief Magistrate. A subscription committee was appointed, consisting of the following, to whom donations may be forwarded: Leopold Stern, 68 Nassau Street; A. K. Sloan, 21 Maiden Lane; C. G. Alford, 11 John Street; L. J. Mulford, 11 John Street; Fred. Goldsmith, 30 Maiden Lane; C. E. Hastings, 11 Maiden Lane; H. H. Butts, 15 Maiden Lane; Simon Fink, 87 Nassau Street; F. W. Lewis, 1 Maiden Lane; Henry Untermeyer, 11 John Street; George E. Fahys, 54 Maiden Lane; Leo Wormser, 51 Maiden Lane; Alfred Krower, 37 Maiden Lane; F. H. Larter, 21 Maiden Lane; Seth E. Thomas, 49 Maiden Lane. The President has requested Oscar S. Straus to appoint a sub-committee on the McKinley memorial for the purpose of canvassing the crockery and glass trades. Mr. Straus has accordingly designated Henry Witte, of Bawo & Dotter; E. F. Anderson, of Geo. F. Bassett & Co., and Geo. M. Jaques, of the *Crockery and Glass*

Journal. The committee recently met at the rooms of the Crockery Board of Trade and organized with Oscar S. Straus as chairman, and L. E. Owens secretary. The "Sub-committee of the McKinley Memorial Association" was adopted as its title, and on motion, Henry Endemann, of Endemann & Churchill; Chas. A. Holbrook, with Edward Miller & Co., and John J. Miller, of Maddock & Miller, were added to the committee. Subscriptions are solicited, and can be handed to any of the members of the committee as named above.

The Jewelers' Security Alliance

The regular monthly meeting of the executive committee of the Jewelers' Security Alliance was held on Friday, December 13th, the following members being present: Chairman Butts, President Sloan, Treasurer Karsch, Secretary Noyes, Vice-Presidents Stern and Kroeber and Messrs. Alford, Abbott, Brown, Champenois and Wood, of the committee. The following new members were admitted to membership:

Chas. N. Hancher, Wheeling, W. Va.
Wm. Allen, Portchester, N. Y.
The Bliss Jewelry Co., Atchison, Kans.
Bowen & Simpson, Winchester, Ky.
Muehert & Cook, Sherman, Frank E. Yantis, Sulphur Springs, Texas.
Fred. J. Heintz, Lexington, C. A. L. Jensen, Ida Grove, Iowa.
Henry C. Richardson, Spencerville, Ohio.
Sabsewitz Bros., N. Y. City.
Jacob Wittlig, Marietta, Ohio.
Wolf & Finke, New York City.
Frank H. Robertson Co., Blackwell, Okla. Ter.
G. W. Bowden's Son, Mayfield, Ky.
A. C. Ca Jacob, Wapakoneta, C. H. Gieseke, Trenton, Ill.
D. Gumbinger, N. Y. City.
M. Judd Co., Toledo, Ohio.
Chas. Rees, Philadelphia, Pa.
E. S. Smith, Sherman, Texas.
Benedict Yehley, Delaware, Ohio.
Cary H. Cloud, Montpelier, E. R. Fisher & Bro., Pueblo, Colo.
Hoover & Smith, Philadelphia, Pa.
Fred. G. Minger, Bern, Kans.
David Urbach, N. Y. City.
McIntire, Magee & Brown, Philadelphia, Pa.
Smith & Gray, Indianapolis, Ind.
Muta M. Swiger, Shinnston, E. G. Sutor, Philadelphia, Pa.
E. J. Jaeger, Portland, Oregon.
Thos. Long Co., Boston, Mass.
G. H. Goggins, Lawler, Iowa.
William H. Doebele, Philadelphia, Pa.
Wm. G. Curley, Geneseo, Ill.
Mrs. N. B. Baylinson, Philadelphia, Pa.
J. W. Beath, Philadelphia, Pa.
Arthur C. Hanger, Des Moines, Iowa.
Wm. Hunt, Uniontown, Pa.
Mather Bros. & Card, Zanesville, Ohio.

John Lang, Philadelphia, Pa.
A. N. Stevens, Portville, N. Y.
Albert Waldin, Quincy, Ill.
Dwight W. Boydston, Nevada, Iowa.
Arthur G. Brewer, Pittsburg, R. J. Litschert, Winchester, Ind.
J. E. Micks Co., Elkhart, Ind.
Chas. H. Savage, Elyria, Ohio.
W. W. Warrick, Pittsburg, Pa.
Geo. H. Huizinga, Holland, A. W. Sing, Tarrytown, N. Y.
Chas. R. Sing, Nyack, N. Y.
J. L. Whisler & Co., Marion, Ill.
Geo. F. Beach, Valparaiso, Ind.
D. C. Cornwell & Bro., Gloucester, Ohio.
John P. Hess, Fond du Lac, A. H. Russell, Weatherford, Texas.
J. C. Van Slyke, Cumberland, Frank A. Elmer, Hudson, N. Y.
Chas. S. Erber, Texarkana, Sam. Freiberg, Topeka, Kans.
The Bentel Bros. Co., Hamilton, Ohio.
Louis N. Philbin, La Fayette, T. H. Evans, Orlando, Fla.
Pirosh & Simmons, Lancaster, Pa.
Winans & Bailey, Coxsackie, S. Kurtz Zook, Lancaster, Pa.
Lester Cerf, New York City.
Jennings, Lauter & Co., New York City.
E. G. Kemmerer, Wilkesbarre, Leon Levi, Baltimore, Md.
Fritz E. Sandwall, South Omaha, Nebr.
John A. Greene, Saugerties, N. Y.
R. G. Winter Jewelry Co., Minneapolis, Minn.
H. Hammernsmith, Milwaukee, Wis.
S. E. Ledman & Son, Louisville, Ky.
Wette & Wieting, Peoria, Ill.
Grace Jewelry Co., Hartford, Conn.
J. F. Gordon, Middletown, Johnston & McKay, West Branch, Mich.

Origin of Name "Maiden Lane"

A query sent to the New York *Sun* recently, regarding the manner in which Maiden Lane derived its name, elicited the following reply: "Maiden Lane is said to follow the course of a little stream, in which the Dutch women used to wash their clothes; the path by the stream was called Maagde Paatje, or maid's path; in time it became Maiden Lane."

Tiffany & Co. Win Law Suit

Tiffany & Co. have been rewarded for the tenacity with which they followed up their law suit, by finally obtaining a satisfactory decision from the United States Circuit Court of Appeals. The point at issue was an interesting one. Since the passing of the tariff act of July, 1897, the Tiffany firm has imported a quantity of what are known as drilled pearls. The law provided for a duty at the rate of 10 per cent. ad valorem on pearls "in their natural state," not strung

or set in the form of jewelry. The phrase "in natural state" was interpreted by the customs' officials as not referring to drilled pearls, and they charged the latter as manufactures not otherwise provided for, at 20 per cent. ad valorem. The nature of the Tiffany claim was that the pearls were practically in their natural state and were accordingly subject to duty at 10 per cent., as provided by the act of 1897. The decision of the customs authorities was sustained by the board of general appraisers and subsequently by the United States Circuit Court. A second case was then presented by the jewelry firm, and on December 16th their appeal was sustained on all grounds. The final decision will no doubt be approved by the trade.

The Jewelers' League

A special meeting of the executive committee of the Jewelers' League was held at the League office, December 16th. There were present President Hayes, Vice-Presidents Greason and Fessenden, Chairman Van Deventer and Secretary Stevens. The following applicants were admitted to membership: Emo Bardeleben, Cedarhurst, L. I., recommended by S. Cottle and R. Klunk; F. A. Ballou, Providence, R. I., recommended by C. H. Cooke and Wm. H. Waite; H. L. Lang, Staunton, Va., recommended by Edwin J. Mayer and Jas. L. McPhail; C. H. Thomas, Durham, N. C., recommended by R. A. Moore and M. H. Jones; Emile Pohle, Providence, R. I., recommended by S. A. Baldwin and L. A. Miller.

Fred. H. Larter, chairman of the New York delegation to the recently-held reciprocity convention, presented on his return to New York a report to the Jewelers' Association and Board of Trade, by which the delegation was appointed. Mr. Larter was the only one of the three delegates and three alternates from this organization who attended the convention. The report submitted by him evidences keen powers of observation and a deep sense of the trust placed in him. In regard to the resolutions passed by the convention, Mr. Larter said in his report: "It was the pleasure of your delegate to vote for the resolutions passed, and it is his judgment that there is at least some ground for the various expressions on the part of many of a coming state of adversity, which can only be relieved by the adoption of some reciprocal measures with other nations."

The sale of the Tell A. Beguelin stock was held on December 13th. It was well known that several of the leading material houses in this city were very desirous of securing parts of this stock. Mr. Beguelin controlled some lines of imported materials of the very best makes, also a number of specialties, the control of which would be very valuable to any of the wholesale material houses. As expected, the buying was very spirited at times. The principal part of the stock was purchased by W. Green & Co., Cross & Beguelin and L. H. Keller & Co., each securing some desirable lots. The retail trade will be interested in knowing that they can continue to get the specialties imported by Mr. Beguelin from these houses who purchased the stock. Due announcements of particulars will no doubt be given the trade.

Louis C. Moss, the jobbing jeweler, of 6 Maiden Lane, has recently enlarged and improved his quarters. The change was made possible by the spreading out of the firm of W. Green & Co., Mr. Moss taking some of the big addition that this firm recently acquired. The change is equally welcomed by both firms, as their previous space was quite inadequate to the growing demands of their business.

(Continued on page 31)



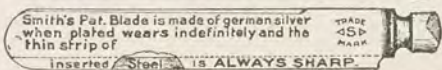
To extend a greeting to the trade under present conditions is a pleasure, indeed. Never did New Year bells ring out a year greater in accomplishment or ring in one greater in promise. Four years of uninterrupted prosperity have so regenerated and fortified the trade that opportunity has a new meaning for them. They are as free to buy to advantage as to sell to advantage. Happily, too, never did a good name and good goods mean more than at present. Our customers already rejoice in the former; we will still furnish them with the latter. Even now our representatives are on their way to you, and their sample cases have a thousand pointers for you in after-holiday replenishing. They carry a full line, and such a one as the good times and your requirements call for. A good beginning is half the victory.

Hayden W. Wheeler & Co.

Telephone, 8 Cortlandt

15 Maiden Lane, NEW YORK

Profits on our Inserted Steel Edge Knives



as on our 'S' brand of Flatware, is at least 75 per cent.; as we place our goods only with dealers who maintain our standard prices.

E. H. H. Smith, Manufacturer 9-11-13 Maiden Lane, NEW YORK



DISTRIBUTING AGENTS CARRYING OUR COMPLETE LINE

N. H. White & Co., New York City.
D. C. Percival & Co., Boston, Mass.
King & Eisele, Buffalo, N. Y.
H. O. Hurlburt & Sons, Philadelphia, Pa.
Goddard, Hill & Co., Pittsburg, Pa.
G. B. Barrett & Co., Pittsburg, Pa.
Benj. Allen & Co., Chicago, Ill.
Oskamp, Nolting & Co., Cincinnati, Ohio.
Albert Brothers, Cincinnati, Ohio.
Joseph Linz & Bro., Dallas, Texas.

Noack & Gorenflo, Detroit, Mich.
Baldwin, Miller & Co., Indianapolis, Ind.
St. Louis Clock and Silverware Co., St. Louis, Mo.
A. J. Jordan Cutlery Co., St. Louis, Mo.
Edwards & Sloane Jewelry Co., Kansas City, Mo.
Leonard Krower, New Orleans, La.
Lehman & Hamilton, Denver, Colo.
J. P. Trafton, Los Angeles, Cal.

Here's wishing you

A Happy New Year

and a very prosperous 1902

Thanks for the big 1901

you've given us

AMERICAN CUCKOO CLOCK CO.
PHILADELPHIA

Buffalo Jewelry Case Co.

MANUFACTURERS OF
JEWELRY & SILVERWARE CASES

PAPER BOXES, TRAYS, CHESTS,
LEATHER GOODS.

329-335 BROADWAY, BUFFALO, N. Y.

*Estimates Cheerfully Furnished
Samples Upon Application*

New York Letter

(Continued from page 29)

Vast Railroad Project

According to recent newspaper reports, enormous engineering difficulties have been solved, at least theoretically, and we may look forward to the time when it will be possible to take a train in New York and ride wherever we will without a change. The project which will make this possible is the connection of the Pennsylvania and Long Island Railroad systems by means of several tubes or tunnels, each containing a track and extending under ground and water from Long Island to New Jersey. The preliminaries, consisting of preparing and filing plans, are being gone through and steps will be taken to obtain the necessary permission from the War Department. It is stated that the carrying out of the project will occupy three years. A most remarkable feature of the great undertaking and one which promises to have far-reaching effects in the development of that section, will be the palatial central station, to be located in Manhattan. Its dimensions will be 1500 feet extreme length by 520 extreme width and it will have two miles of platform length.

The Depression in Germany

Leo Hammel, of the manufacturing and importing house of Hammel, Riglander & Company, of this city, arrived here a few weeks ago. He will return to Frankford, where the glass and material factories of the concern are located, sometime during January. Speaking of the reported depression in trade in Germany, Mr. Hammel said that it was confined largely to the steel, iron and textile industries. As far as their own trade was concerned, he could not as yet see any falling off. He stated that Germany's foreign trade had been severely affected by the war in China and South Africa, and also by the internal dissensions among the South African republics. Asked as to the truth of the statement current in this country that the German manufacturers were sending over skilled workmen to learn what they could about American machinery and methods of manufacturing, he stated that he knew this had been and was now being done, and that the American manufacturers were very foolish in admitting men of this character into their factories, not only as workmen, but as visitors. He stated that the American custom in this regard needed revision and more care should be exercised in admitting everyone and anyone into factories where they could obtain valuable trade secrets. Such a thing was impossible in Germany, Mr. Hammel stated, as he would not even think of taking a German friend through his own factory, much less a foreigner. There the factory door is sealed to all outsiders.

Notice was received in this city of the death of an old-time New York merchant who was well known in the trade throughout the country before the Civil War. James Kahn died in Geneva, Switzerland, December 23d, in the seventy-fourth year of his age. He was senior member of the firm of Kahn, Limburger & Co., who, in 1866, was succeeded by the present firm of L. & M. Kahn & Co., importers of precious stones. After selling out his business in this country, Mr. Kahn made his home in Switzerland and for twenty-five years was the European representative and buyer for his successors; two members of the new firm, Louis and Moses Kahn, being his brothers. About ten years ago he retired altogether from business. He leaves a wife and large family, including Arthur and Alphonse Kahn, both connected with the jewelry

trade in this city. The deceased is said to have been the first dealer in this country who made regular trips to Europe for the selection of goods for his trade here. He had a wide acquaintance among the older members of the trade in this country and also throughout the trade circles in Europe, and was held in very high esteem by all who knew him. His brother, Moses, of the firm of L. & M. Kahn & Co., happened to be in Amsterdam at the time of his brother's death and was thus enabled to be present at the funeral services.

George W. Washburn, who carried on a jewelry business in the vicinity of Maiden Lane, died suddenly on December 5th at 22 West Sixteenth Street. Of late years he was located at 12 John Street, where his business is now in charge of his son. Deceased was sixty-six years old, and his death is said to have been due to heart failure.

Andrew B. Davies, the young Southern traveler of W. Green & Co., who was taken ill while on his fall trip in the South, has entirely recovered from the operation that it was found necessary to have performed on his arrival at the hospital in this city, and is now ready to make an early start this month for his labors in the South. At the same time, Allen Fellecker will start on a trip for the same firm, covering the Eastern States. Both men will take the complete line handled by the house, which comprises many recent additions.

M. J. Strauss has retired from the firm of Hammel, Riglander & Co. to accept the presidency of the Standard Rotary Motor Co., of this city. It is said that this company have an exceptionally fine motor and one that is cheaper to build, a saver of steam and a greater generator of power than any other made. Mr. Strauss organized the company of which he has been elected president, and as there is a greatly-increasing use and demand for motors, the company have a very bright outlook ahead of them.

F. L. Cahn will represent the interests of Dattlebaum & Friedman, ring manufacturers, of this city, in the Western and Pacific Coast States. Mr. Cahn will also continue to visit his old trade in the Southwest. I. Guntzberger, who formerly covered the far Western States for this firm, has started in business for himself in this city.

J. Val. Bergen, of the J. D. Bergen Cut Glass Company, has started on his second tour of the Southern States, where he was so successful last fall. Val. is one of the long line of Bergens who have been brought up in the glass business and adds to his practical knowledge fine ability as a salesman—a winning combination on the road. His present trip will last about four months, in which time he will cover the entire Southern States, stopping at the principal cities and larger towns. The year just closed is reported as having been the best in the history of the Bergen Company, they having been busy right up to the holidays, working their plant night and day in order to meet the demands for their line of cut glass.

A mysterious robbery of a diamond chain, valued at \$3500, of which either the Adams Express Company or the Shaw & Berry Co., of 1105 F Street, Washington, D. C., who shipped it to New York, are probably the victims, occurred at the close of last month. It was dispatched from Washington to the New York firm of Joseph Frankel & Sons and when delivered to the latter firm there was no evidence that the seal had been tampered with. The stolen gems numbered two hundred and were set in a platinum lorgnette chain fifty-four inches long. The package was made up by the Washington firm under the personal supervision of the proprietors and was duly registered.

At the recent meeting of the Watchmakers' and Jewelers' Benevolent Association the following officers were elected for 1902: President, J. Rosenkranz; first vice-president, J. Shapiro; second vice-president, P. Krukin; treasurer, P. Hersh; recording secretary, P. Salas, Whitestone, N. Y.; financial secretary, M. Slavut; sergeant-at-arms, S. Meren; first trustee, A. Pasch; second trustee, L. Berk; third trustee, P. Shapiro.

The traveling force of C. G. Alford & Co., for 1902 is as follows: Southern States, J. W. Steele and W. W. Braddy; Middle West, Whitson Colyer and G. W. Swart; Pennsylvania and Atlantic Coast States, H. S. Colyer; far West, H. C. McConnell; New England States, C. H. Leonard; New York State, H. H. Hurlbert. O. S. Clark, who has been covering New York State for this firm for some time past, will remain at headquarters hereafter and will be the jewelry buyer.

L. W. Reubenstein, 54 Maiden Lane, this city, is mailing to the trade a very pretty calendar. Above the calendar-pad is a fine half-tone cut representing a group of old folks exchanging confidences over their beverages. Another very handsome calendar is being issued by W. W. Randall, 13 Maiden Lane. It is in the form of a large hanger and handsomely printed in colors. Still another very elaborate calendar is that issued by Stern Bros. & Co., the diamond merchants, of 68 Nassau Street. This is also a large calendar and printed in colors. The latter two firms have been noted for many years past for the very handsome calendars they have sent to the trade, and each year strive to get something more novel and handsome than issued heretofore. Regular dealers can no doubt obtain any of the above calendars by sending in a request to either of these parties.

Sumner Blackinton, of the W. & S. Blackinton Co., the well-known chain house, has the sympathy of the trade in his bereavement over the loss of his wife, who died on December 9th, after a short illness.

A Misstatement Corrected

NEW YORK, December 20, 1901.

Messrs. Robbins & Appleton,
Agts. American Waltham Watch Co.,
21 Maiden Lane, City.

GENTLEMEN:—Our attention has been called to certain malicious statements, to the effect that "we do not carry genuine American Watch Materials," and as this line is such an important factor in our business, we shall be pleased to have you certify to the inaccuracy of the statements alluded to. Yours very truly,

W. GREEN & CO.

[REPLY.]

NEW YORK, December 20, 1901.

Messrs. W. Green & Co.,
6 Maiden Lane, New York City.

GENTLEMEN:—Replying to your favor of the 20th inst., would say that we are at a loss to understand the source and purport of such gross misrepresentation.

If you find it necessary to place us in communication with any of your customers, and in this manner establish beyond doubt the fact that you do buy Genuine Waltham Material of us, and, furthermore, carry one of the largest stocks of Waltham Material in this section, do not hesitate to avail yourselves of our earnest co-operation.

Yours very truly,

—Adv. ROBBINS & APPLETON.

Light Up Your Store



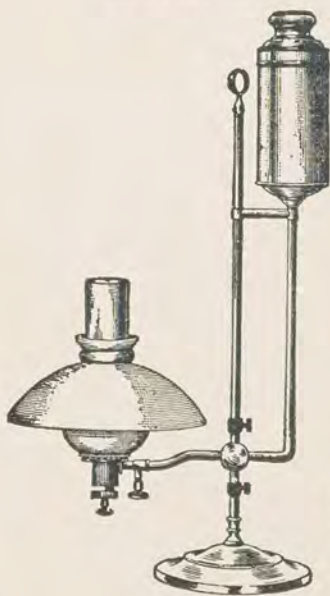
No. K225. Fancy Brass Harp Lamp.
100 Candle-power.
Complete, price each, \$4.75.
Cost to run, $\frac{1}{2}$ cent per hour.

Try the effect of a well-lighted store on your customers and watch results. Kerosene gives a pale, sickly light; gas and electricity are entirely too expensive, and all three are as a Christmas tree candle compared to the new Bystrom gasoline gas lamp. It is no longer necessary to have a dark store on account of the expense involved in lighting it properly. The Bystrom gives you 100 candle-power per burner, or in other words more light than six average electric incandescent lights. The arc lamp below gives you 700 candle-power, or more than 43 incandescent lights. These should be convincing figures when you consider the price. You can sell them to your customers and make a good profit. Many jewelers are doing this. Send for descriptive circular giving full particulars.

We, without doubt, have the most complete material department in the world—carry a full stock at all times and employ clerks that know their business. Send us your orders and we will give you the right treatment.



No. K125. Brass Harp Lamp.
100 Candle-power.
Complete, price each, \$4.00.
Cost to run, $\frac{1}{2}$ cent per hour.



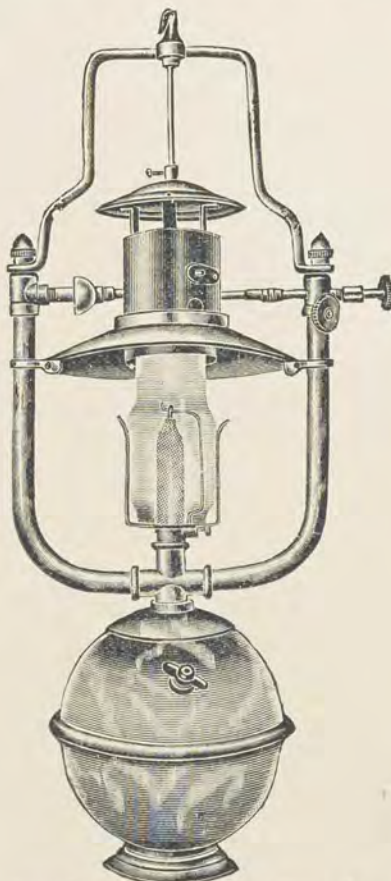
No. K75.

**VERY QUICK-
LY LIGHTED
AND EASILY
CLEANED.**

**No. K75. Student
Lamp.**

Nickel Plated. Removable font. Furnished with extra collar and set screw, so as to swing or remain stationary at any elevation. 100 candle-power.

Complete, price each \$4.25.
Cost to run, $\frac{1}{2}$ cent per hour.



The American Arc No. K500 Store Lamp.

700 Candle-power. Oxidized copper finish. A light equal to an electric arc light.

Complete, each, \$8.75
Extra mantels, each,20
Extra chimneys, each,10

Cost to run, $\frac{1}{2}$ cent per hour.

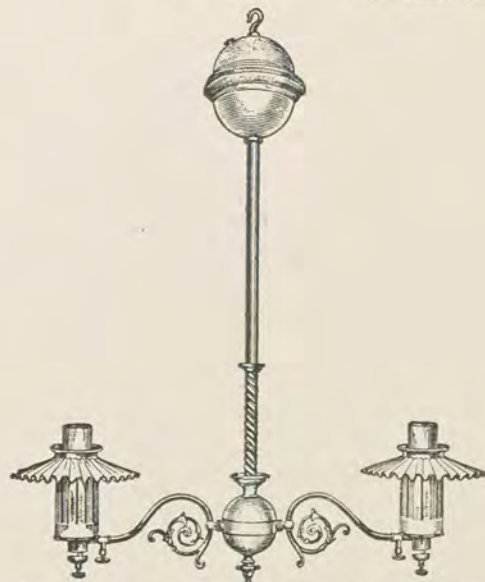
**THEY DO NOT
INCREASE
YOUR FIRE
INSURANCE.**



No. K300.

**No. K300. Brass
Pendant Lamp.**
100 Candle-Power.
Complete, price each \$2.50.

Cost to run, $\frac{1}{2}$ cent per hour.



No. K450. Fancy Brass Two-Light Fixture.
Spread, 32 inches. With large non-breakable globes and fluted shades, same as shown in cut. 100 candle-power to each light.

Complete, price each, \$10.75.
Cost to run, $\frac{1}{2}$ cent per light per hour.



Automatic Six-Foot Spring Extension.

Ornamental brass. Should be used on all hanging lamps. A great convenience. Saves time. Saves mantels.

Price, each, \$1.25.

6 PER CENT. DISCOUNT FOR CASH.



No. K400. Brass Two-Light Fixture.
Spread, 30 inches. With large non-breakable globes. 100 candle-power to each light.

Complete, price each, \$5.00.
Cost to run, $\frac{1}{2}$ cent per light per hour.

Mantels.

The Industria,
Per doz., \$1.30.
The Diamond,
Per doz., \$1.60.
The White Knight,
Per doz., \$2.25.

BENJ. ALLEN & CO., DISTRIBUTORS
131-137 Wabash Ave., CHICAGO, ILL.



WESTERN BUREAU OF THE KEYSTONE
ROOM 511 COLUMBUS MEMORIAL BUILDING
CHICAGO, December 28, 1901

The State of Trade

The retail jewelers throughout the land, especially those in the Great West, are to be congratulated on the success of the holiday season just closed. Never before has there been such a universal movement among the people to spend money freely for holiday gifts of the most varied and expensive kinds. The jewelers' sales, as indicated by accounts from all sections, have been of an exceedingly satisfactory character. In fact, it seems to have been a jewelry year, and the jewelers got their full share of the wonderful gift-buying season just passed. Nearly everything sold—no one article seems to have had the call. Here in Chicago the large State Street stores report the largest business of their history. Diamonds were in good demand, but big sales that could be classed as really notable were few. In watches it seems that all previous records were broken. As an instance of how they sold we mention that one of the large retail stores on State Street sold 125 watches in one day, and will likely sell close to the 1000 mark before the month is out. Another State Street store has enjoyed an unusually large run on clocks, doing double what they did in this line last year. All of our leading stores say there was a large demand for sterling flatware. Leather goods and cut glass sold well, much better than last season. The buying began earlier than usual and kept up till Christmas. This was true in all lines and this feature did as much as anything to make the season a record-breaker. The record-breaking extent of the season's trade is evidenced on every hand. Chicago merchants in leading lines estimate that their receipts the past few weeks have been between 20 and 25 per cent. greater than any previous year for the same length of time. The sales for the Monday before Christmas were the largest ever recorded in a single day in Chicago. Let us give some interesting figures right here. It is estimated by conservative authority that the holiday trade of the State Street establishments in all lines amounted to \$12,000,000 during the last three weeks of the season, and some have

estimated the total holiday trade of the whole city of Chicago at \$25,000,000. These figures would be of only local interest if it were not that they fairly represent the trade situation throughout the Middle West. What was going on in Chicago the three weeks before Christmas was also taking place in all the other trade centers of the corn and wheat belts. The actual prosperity evidenced by the holiday trade has surpassed the expectations of even the most optimistic prophet. The result of a prosperous period of this character cannot help being favorably felt in every part of the jewelry business, and we cannot see why, under such business conditions, that the jewelers of the West should have had any difficulty in having a merry Christmas. Thus the year draws to a close with most satisfactory conditions, and with much promise for the new year, for there is every indication of a steady continuance of the present good times.

A Sign of the Times

A good sign of the times for the opening of the new year is the cry that comes from every railroad in the country on account of the shortage of cars in which to load the traffic awaiting transportation. The wheat fields of the Dakotas, the coal and iron regions of Pennsylvania, the fruit gardens of California, and the cattle ranches of Wyoming and Montana all send forth the same cry for more cars. It is a cry which for a time at least must go unheeded. The railroad companies of the country for the last two years have been ordering cars by the thousands. The carshops have been kept running night and day to fill their orders, but still the cry is heard in more incessant and more urgent tones. Business has increased at a far more rapid rate than the means of transacting it, though it was believed that these had been planned on the most generous basis. The unprecedented and unforeseen increase is due to the exceedingly rapid development of the country's resources in the interior. The general trend of traffic has changed. The bulk of it used to be eastward. Now it is westward. The movement of farm products to the coast for export has become considerably less than the movement of general merchandise to the great prairie lands of the West.

Otto Young's New Building Project

It has been announced within the past few days that Otto Young, head of the wholesale house of Otto Young & Co., will make important building improvements right in the heart of the State Street retail district, which will include the site where the firm's present building is located at 149 and 151 State Street. Mr. Young will build a sixteen-story modern fire-proof structure, covering the ground at 145 to 153 State Street. This property has a frontage of slightly more than 100 feet and a depth of 144½ feet. Mr. Young owns the fee of the property at 145, and after the first of next year will hold the remainder of the property under long term leases. He already holds the property at 149-153 under a lease secured this year from Samuel A. Crozer, of Upland, Pa., while the lease of 147 from Harriet Albee and others will become operative with the beginning of next year. A condition of the leases is that Mr. Young is to erect a building to cost not less than \$140,000, and it is said the cost of the proposed building will, of course, be in excess to these figures. It is understood that the first floor of the Young Building will be devoted to high-class shops, and that the upper floors will contain, among other things, jewelry establishments and allied enterprises, somewhat after the manner of the Silversmiths' Building.

About Present Corn Exports

The highest point reached in corn exports was in the year ending June 30, 1898, when 209,000,000 bushels were shipped out. This record was duplicated in the year ending June 30, 1900. The current year starts with a comparatively light business, corn going out at the rate of about a million bushels a week. The cause of the shrinkage is easily found in the advance in price. More corn is wanted on the other side than ever before, but its use is restricted on account of price. And this suggests another point. It is evident that the bulk of the corn which has gone abroad in recent years has been used for feeding or manufacturing and not as food for people. If the demand for food had enlarged as much as some enthusiasts have asserted it would not be cut off so suddenly by an advance in price.

Development of Oklahoma

According to the daily press, Delegate Flynn, of Oklahoma, says: "The development of Oklahoma has been wonderful. More than 20,000 people have bought farms in the territory within two years. Trains are crowded, and where one train was formerly enough, three trains are now barely sufficient. Farms given as free homesteads two years ago are in some cases now worth \$10,000. The assessed value of Oklahoma is \$300,000,000. More than 100,000 people have been added to the population under the opening of the new lands. Three country seats containing 320 acres of land in what was a wilderness last August, brought before the end of the month \$750,000 from the sale of lots, the money to be expended for improvements in the counties. Oklahoma is coming into the Union with flying colors."

Flax Crop in North Dakota

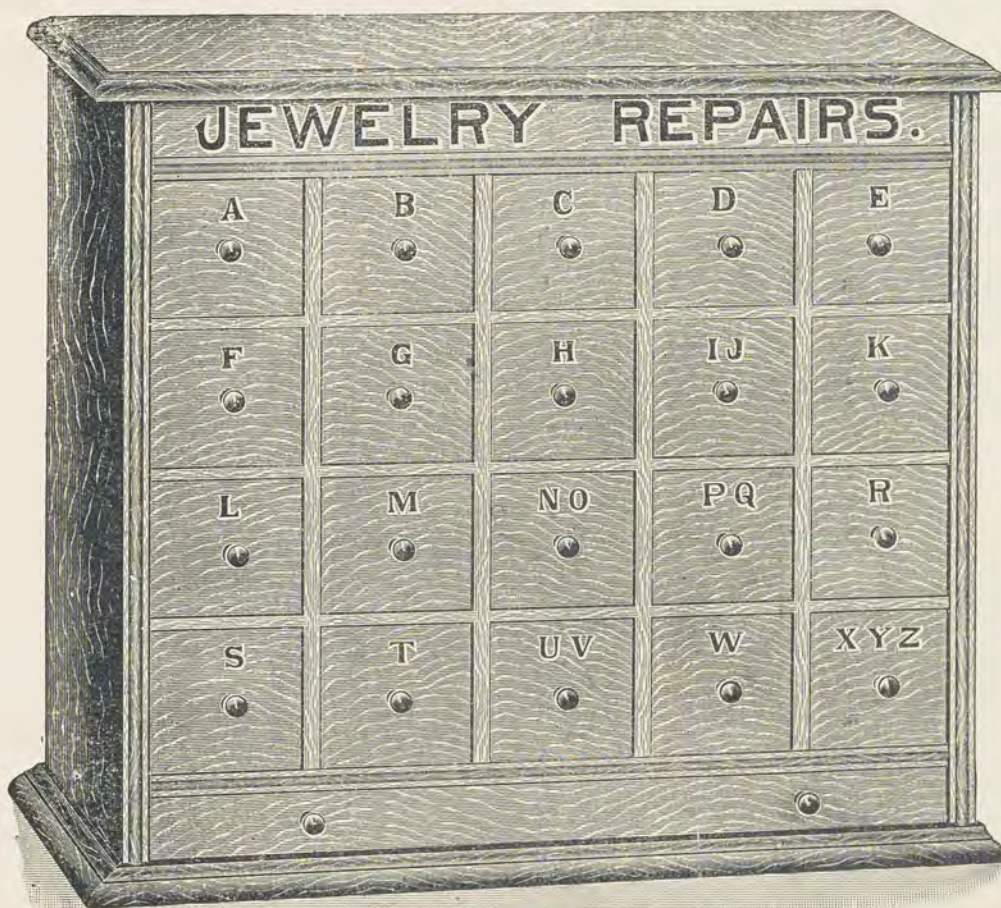
Speaking of the flax crop in North Dakota, returning travelers say that a much larger proportion of this crop has been saved than seemed possible sixty or ninety days ago. That State has been favored with ideal weather for fall work up to the second week in December, and many hundreds, probably thousands, of acres of grain have been saved as a result. The prevailing price for flax during the fall has been from \$1.50 to \$1.45 per bushel in Minneapolis and Duluth. This left about \$1.25 per bushel for the farmer at his home town. It is estimated that the North Dakota crop averaged 12 bushels per acre this year. Many pieces yielded 20, 22 and 25 bushels per acre. A trifling bit of figuring demonstrates what the farmer has been able to get from even a small piece of ground. Much of this flax crop would have been lost had snow fallen early, so that it is almost like finding money. The trade in North Dakota reaps from the conditions a benefit in the way of early settlements and increased business from the farming population. The crop this year is the largest ever produced in the history of the State, and will undoubtedly lead to a greatly increased acreage in 1902. General prospects for trade in the Dakotas for the new year are much more promising than a year ago.

Unique in Still One Other Feature

Chicago is still unique in one other feature, and we feel we would be remiss in our duty if we did not mention it right upon the threshold of the new year. Our hydraulic engineers and officials of the department of public works say that Chicago is the only great city in the world where the water supply is unlimited and can be increased indefinitely at comparatively small cost. In summer its public water is probably the coldest of any to be had in the United States. Lake Michigan seldom becomes warm enough to allow of

(Continued on page 35)

Swartchild's "Perfect" Specialties



No. A.

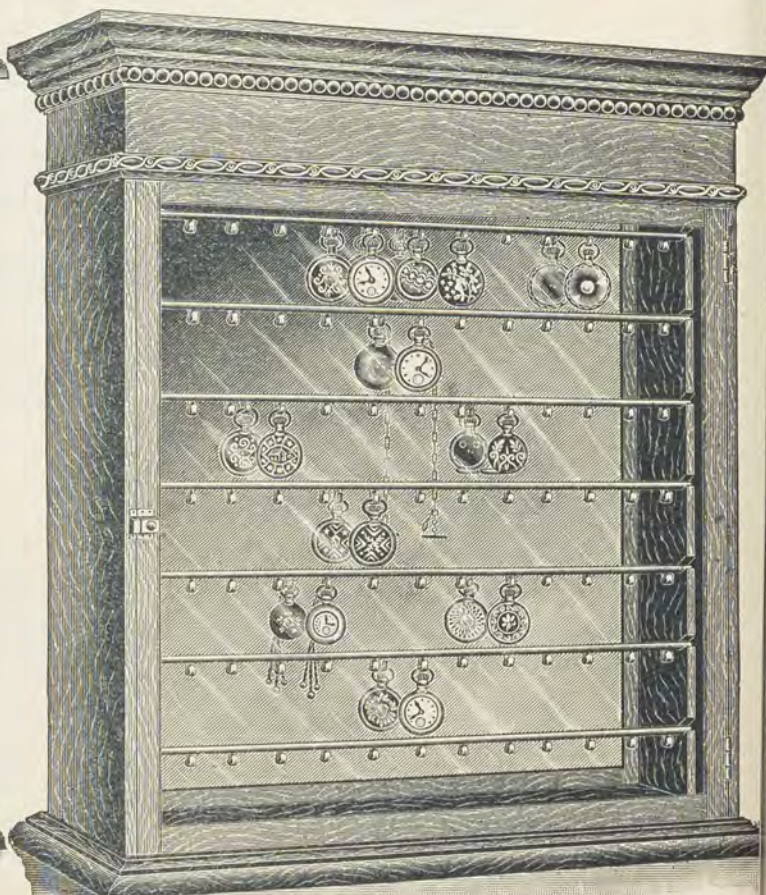
"Perfect" Jewelry Repair Case

Can you afford to do without it?
No more mistakes possible!
Every job in its proper place!
No time wasted looking for it!

This addition to "Our Perfect" line of novelties is a handsome Cabinet of solid golden oak, piano finished, destined to hold conveniently Jewelry and Optical Repairs of almost any size, which may come to a jeweler for repairs. Each of the 20 drawers is provided with a neat letter in alphabetical order. The large lower drawer will be found a handy addition for tags, envelopes, etc.

Dimensions { Cabinet, 30 in. long, 23 in. high, 9 in. deep.
Drawer, 4½ in. wide, 3 in. deep, 7½ in. long.
Lower drawer, 26 in. long, 3 in. deep, 7½ in. wide.

Price of Cabinet, 21 Drawers, **\$6.50**



No. B.

Pat. applied for.

"Perfect" Watch Repair Case with Mirror Back

Every watchmaker will recognize the advantages of this Cabinet.
In appearance, there is nothing better at any price.

Made in solid golden oak, hand polished, with double-thick glass swinging door, bronze catch, fitted inside with removable nickel-plated rods and hooks, back lined with full-size best American mirror. Watches can be placed in a safe without being removed from the rods, and being reflected in the mirror give the case a novel and beautiful appearance.

Size of Cabinet:
30 in. wide, 34 in. high, holding 100 watches.

Price, **\$12.75**

Our 700-page Catalogue will be sent FREE upon application, enclosing business card.

SWARTCHILD & COMPANY

Watchmakers' and Jewelers'

Supply House

Established 1870

131 to 137 Wabash Avenue, Silversmiths' Building, CHICAGO, ILL.

Chicago News

(Continued from page 33)

bathing in it without a feeling of chilliness. The fortunate Chicagoan has only to flee to the bathtub on the hottest day of summer to revel in bliss unknown where the most prolonged "running off" of the water supply fails to reduce the temperature of the fluid much below that of the air. That he makes full use of his advantages seems to be apparent from the figures. A distinguished Frenchman, who recently visited Chicago, expressed the opinion that the town itself was the dirtiest and its individual citizens the cleanest in the world. The report of Chicago's commissioner of public works for 1900 shows an average consumption of water drawn from Lake Michigan of 327,492,389 gallons per day. On the basis of the federal determination of the city's population (made at the same time as New York's, in June, 1900) the 1,679,575 people of Chicago, each use 195 gallons of water per day, or 80 gallons more than the average inhabitant of New York.

New Year Changes Among the Wholesalers

There will be a number of changes among those holding responsible positions in the leading Chicago wholesale houses, and new faces will be seen here and there with the opening of the new year. At Otto Young & Co.'s, Charles H. Spencer, well and favorably known among the trade from his long connection with B. F. Norris, Alister & Co., will be found already installed in a responsible position as assistant to Mr. Schnering, the managing partner. At the Stein & Ellbogen Company's office, Harry S. Aller will be found installed as buyer of jewelry, succeeding Ed. B. Hoffman. At J. W. Forsinger's, W. M. Davidson has succeeded Miss C. B. Thompson as buyer and confidential assistant to Mr. Forsinger. Miss Thompson will rest after January 1st for three months, when she will again connect herself with one of our wholesale firms in a responsible position. At B. F. Norris, Alister & Co.'s, Peter T. White, for several years past buyer of jewelry at Otto Young & Co.'s, will assume the position of buyer and manager under Mr. Alister.

Conditions in Kansas

Trade conditions in Kansas the past few years have been good, so much so that the people out that way speak of their good times as "progressive prosperity." The latest report of the Kansas State Agricultural Bureau shows that the present has been the best year that the farmers of Kansas have ever known. In spite of the partial failure of the corn crop the aggregate value of farm products and live stock in the State in 1901 was no less than \$348,292,384, or \$17,000,000 more than last year, and \$45,000,000 greater than two years ago. The season's wheat crop is reckoned at \$90,000,000 bushels, which is much larger than any previous wheat crop. While the corn crop was considerably smaller than the average, the falling off in amount was largely counterbalanced by the increase in market value. Corn is now worth about 50 cents a bushel on the farm. Under these favorable conditions the spring trade in Kansas for the new year should be good.

The World's Wheat Crop for 1901

Several foreign estimates on the world's wheat crop of 1901 place it at about 2,700,000,000 bushels. One of the estimates is by the Hungarian Department of Agriculture, and is an interesting item of commercial news. Some of the principal items of the estimate in bushels follow: United States, 652,000,000; Can-

ada, 93,000,000; South America, 93,000,000; Great Britain and Ireland, 55,000,000; France, 283,000,000; Spain, 110,000,000; Italy, 122,000,000; Germany, 95,000,000; Austria, 43,000,000; Hungary, 138,000,000; Roumania, 69,000,000; Turkey, 70,000,000; Russia, 417,000,000; India, 249,000,000; Africa, 51,000,000; Australasia, 59,000,000.

Personal Mention

Jeweler Joseph Steffek, retail, at 265 Blue Island Avenue, was married to Miss Albina Nemeck, of this city, on November 20th. Mr. and Mrs. Steffek will be at home to their friends after January 1st at 968 Twelfth Street Boulevard. Though somewhat belated, THE KEYSTONE takes pleasure in extending congratulations to the young people.

Ira W. Smith, who has represented the Horton-Angell Company, of Attleboro, in the West and Southwest among the jobbing trade for two years past, arrived in Chicago last week as the successor to Fred. R. Sheridan, as the Chicago and Western representative of the above firm. We mentioned Mr. Sheridan's resignation and his going with Arnold & Steere, ring makers, of Providence, last month. Mr. Smith will have his headquarters in Chicago, the same as his predecessor, and the trade will find him a mighty pleasant gentleman to do business with.

John Grant is now in charge of the Chicago agency of the New Haven Clock Company, succeeding Charles Lester, who resigned December 1st, to take the exclusive Western agency of the New England Watch Company. Mr. Grant has been employed in various capacities in the Chicago office of the New England Company on and off for ten years past, and by hard work and faithful service has won his promotion. The trade will find him a pleasant man to deal with, full of energy and business.

C. L. Cate, formerly with Rohm & Rylander, Iron Mountain, Mich., is now watchmaker for A. M. Church, the general railway time inspector in the Champlain Building.

Emil Greyer, representing J. W. Forsinger, at Scranton, Pa., was in town for a few days the early part of the month visiting at headquarters.

Cards announcing the marriage of Thomas H. Gadson, to Miss V. L. Grant, at Beaver Dam, Wis., December 4th, have been received at this office. Mr. Gadson is well-known to the trade as watchmaker for Jeweler William Bard, Portage, Wis. Along with his many friends THE KEYSTONE extends congratulations.

W. D. Port, for several years past with the Madson & Buck Company, is now with the New Haven Clock Company, as city salesman.

Edmond J. Hahn, of H. F. Hahn & Co., came in last week from a two-weeks' trip in Western territory in the interests of his firm. Traveling life is a new experience for Mr. Hahn, but he tells us that he rather enjoyed it and thinks that an occasional whiff of life on the road is a good thing for a house man.

Ed. E. Reynolds is a new member of the traveling force of C. H. Knights & Co. and will cover Northwestern territory. Mr. Reynolds is well and favorably known among the trade from his long connection with the Chicago branch of the Dennison Manufacturing Company, whom he has represented in Western territory for a number of years past. He goes to his new position January 1, 1902.

J. H. Carr, M. M. Cloudman and A. L. Kingsbury, traveling missionaries for the Elgin Watch Company, have been at headquarters the past two

weeks after rounding up a busy year's work in their various territories. They report that 1901 has been a banner year for the sale of watches among the retail jewelers and that the demand for Elgins has been greater than ever before.

Frank E. Jack, manager of the Queen City Silver Company, Cincinnati, was in Chicago a few days in the early part of the month calling on the trade in the interests of his firm. Mr. Jack found time while in town to call at KEYSTONE headquarters and say that their business this fall was only limited by the capacity of their factory. While here Mr. Jack completed arrangements with Hugh F. King, the well-known Western silverware salesman to take charge of the Queen City's interests among the Western trade, with headquarters in Chicago.

Emil Despres, of the new wholesale firm of Despres, Bridges & Noel, who will open for business the first of January on the third floor of the Vinitian Building, has been in the East the past fortnight visiting the manufacturing centers and selecting the opening stock for the new firm. He arrived home the early part of this week and tells us that the new firm will be ready for business soon after January 1st.

News was received here last week announcing the death of Jeweler M. W. Quarles, a member of the firm of Quarles Bros., Clarksville, Tenn. He shot himself in his store, dying instantly. Mr. Quarles was thirty-six years old, unmarried, and it is thought that mental strain temporarily unbalanced his mind.

Among the November and December students at the Northern Illinois College of Optics was M. Sandstein, a native of New Zealand, but still an Englishman, or Briton, in every fibre. Mr. Sandstein came to Chicago for the express purpose of taking an optical course, but will remain some months to become acquainted with the country and our ways of doing business. His father was, during his life, a leading jeweler of New Zealand, and left a handsome estate. One of the sons is a professional optician, practicing at Christchurch, having taken a course in ophthalmology under Lionel Laurance, of England, some years ago. Mr. Sandstein since his graduation has located in Oshkosh, Wis., where he will endeavor to get his hand in as an optician before returning home.

D. R. Parsons, of Derbyline, Vt., was among the students who completed an optical course at the Northern Illinois College in December and has returned to his native State.

J. R. Pardee, of Eureka, Cal., and related to the well-known mayor of Oakland by that name, was among the students who graduated at the Northern Illinois College this month. He has returned to his native State.

George B. Adams, the well-known diamond salesman, formerly with C. D. Peacock, is now with the C. E. Graves Company, at Madison and Clark Streets.

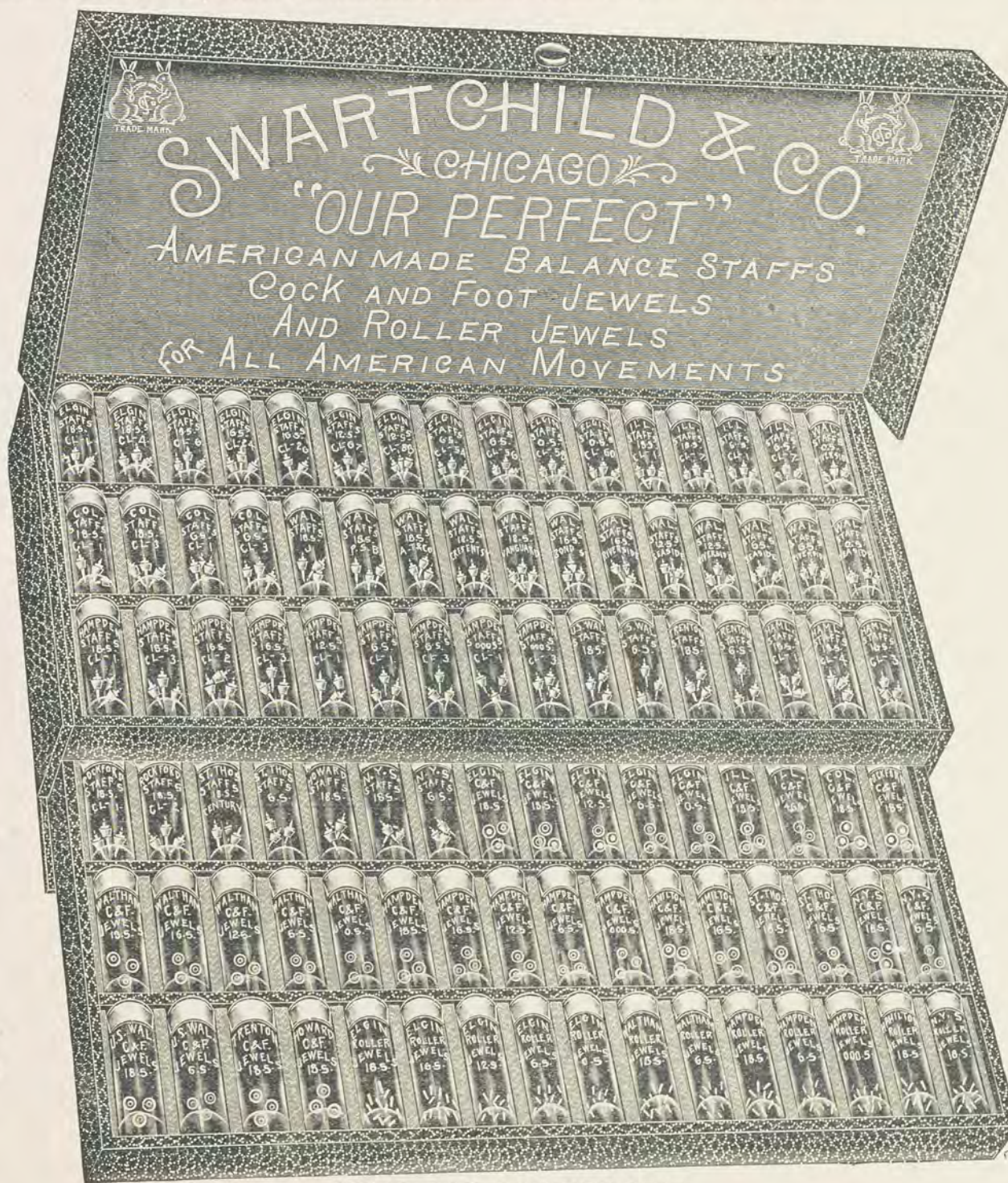
The Juergens & Andersen Company, Chicago, announce that they will be represented among the trade during 1902 by the same traveling force as last year, which includes Louis W. Bruns in the West; Franz Eschenburg in the Northwest territory and Henry Reinhard in the South and Southwest.

Reymond Mead, the nineteen year old son of Morris A. Mead, head of the firm of M. A. Mead & Co., is spending the winter on a cattle ranch in Northwest Texas, where he is enjoying the rough life of the plains and mountains. Young Mead is a manly and promising young man, who expects to enter college life next fall.

(Continued on page 37)

How to save time, labor and money.
An absolutely new idea for Watchmakers.

This is done by using "Our Perfect" American-made material as shown in the Cabinet below. 55 different kinds of Balance Staffs for American-made Movements. 29 different kinds of Balance Jewels for American-made Movements. 12 different kinds of Roller Jewels.



EXACT SIZE
OF BOTTLE.



Our
700-Page
Catalogue
will
be sent
FREE
upon
application
by sending
business
card

SOLID OAK CABINET SIZE

No. 0134. Our Cabinet complete contains 96 bottles, all filled and labeled of—

7½ dozen Polished American-made "Perfect" Balance Staffs,
6¼ dozen Gray finish American-made "Perfect" Balance Staffs,

74 dozen Ruby and Sapphire First Quality American-made "Perfect" Balance Jewels,
12 dozen our "Perfect" Roller Jewels—

33 dozen in all.

Price complete, \$32.00

"Our Perfect" Balance Staff, High Grade, Polished, for all American Movements

, per dozen,

Gray finish,

" Cock and Foot Jewels,

1.4	2.1
2.4	1.6

Roller Jewels,

0.5 1.0

Cabinet shown above is made of Solid Oak, highly polished; has two trays holding 96 bottles; grooved so bottles lay firm. A very fine Cabinet to hold all material of any kind. Price of Cabinet, with 96 bottles,

\$4.00

SEND YOUR ORDERS FOR ABOVE DIRECT TO

Swartchild & Company,

Watchmakers' and Jewelers' Supply House
131 to 137 Wabash Avenue, Silversmiths' Building
CHICAGO, ILL. Established 1870

Chicago News

(Continued from page 35)

Charles Lester, who has had charge of the joint office of the New England Watch Company and the New Haven Clock Company, at 149-151 State Street, has resigned as Western manager of the New Haven Clock Company and will hereafter devote his entire energies to the upbuilding of the business of the New England Watch Company in the Western territories. On January 1st this company will remove their office to the eighth floor of the Silver-smiths' Building, where they will have handsome quarters. Large vaults are to be constructed for carrying stock to supply the Western trade, and four travelers will travel from the Chicago office.

The twenty-fifth annual banquet of the Chicago Jewelers' Association will be held on the evening of January 16, 1902, at Kinsley's. The banquet of this association has long been the swell function for the year in jewelry trade circles, but the coming dinner promises to surpass all others in every detail, as the quarter-century anniversary of the association makes the occasion one for special celebration. A. L. Sercomb, Western representative of the International Silver Company, is chairman of the banquet committee, and those who will assist him are: Lem W. Flershem, H. F. Hahn, W. H. Vogell, W. J. Miller and J. F. Talbot. What the features of the banquet will be the committee is not ready yet to announce.

Since the death of James A. Todd, the Chicago office of the Towle Manufacturing Company has been in charge of W. X. C. Hull, who has been assistant manager since the office was founded.

John H. Mertz, of the Rich & Allen Company, whose serious illness from typhoid fever was mentioned in these columns last month, was at business for the first time since his illness the early part of the week. Mr. Mertz though somewhat weak from the hard seige he had to pass through, is gaining his former strength rapidly.

Prof. Richard O. Kandler, of the Jewelers' School of Engraving, returned last week from a three-months' stay in New York, bringing with him same new ideas in the engravers' art which he will use to the benefit of his school.

Jeweler C. H. Reynolds, of Alpena, Mich., has recently fitted up one of the most modern and finest jewelry stores in the State of Michigan, the improvements being finished in time for the holiday season. Mr. Reynolds gave a swell opening in honor of his new establishment, December 12th, which proved most successful and profitable. Ed. B. Hoffman, with H. F. Hahn & Co., spent the day with Mr. Reynolds and reports the function as most creditable in every way.

M. A. Munson, the well-known jeweler of Mendota, Ill., got nicely settled in his new store in time to take care of the most satisfactory holiday trade in his business career in Mendota. Returning travelers tell us that the new store is a model in arrangement and neatness. One of its features is an up-to-date optical parlor, which is the special pride of Mr. Munson.

Gossip

Announcement was made early in the month of the dissolution of the old firm of J. Floersheim, Kunstadter & Co., and that Albert Kunstadter had assumed all liabilities of the firm. Notice was also given that Albert Kunstadter, Max. Kunstadter and Sam. Kunstadter had formed a partnership under the firm-name of Kunstadter Brothers, and

that they would succeed to the business of the old house and continue same at the old stand, 243, 245 and 247 Adams Street, Chicago.

The Search Light Manufacturing Co. have recently incorporated, with a capital stock of \$40,000, with offices at 185 Division Street, Chicago. This firm, formerly a co-partnership, has been successfully engaged in manufacturing search light vapor lamps and other trade specialties for nearly three years. They started in a very modest way, but have expanded four times, trebling or quadrupling their space at each expansion. The officers of the new corporation are Howard E. Clark, president; Paul Clendenning, vice-president; Ernest C. Gridley, secretary, and William A. Burch, treasurer.

The most important matter given consideration at the meeting of the directors of the National Association of Credit Men, recently held at the Auditorium Hotel, this city, was the attitude of the Association toward the bankruptcy law. It was the opinion of the directors that the law should be amended and that it would be to the interests of business men if the Ray bill, introduced in the House of Representatives in February, were passed.

The Geneva Optical Company have recently put in new and improved machinery in their manufacturing department and rearranged their factory. This will add to their facilities to promptly and more carefully take care of their steadily-increasing business. This firm are invoicing this week and inform us that they are winding up a most satisfactory year's business in fine shape.

Obituary



James A. Todd

No death in a long period has occasioned so much sincere and general regret among the trade as the demise of James A. Todd, vice-president and manager of the Chicago branch of the Towle Manufacturing Company. His was a familiar face among the trade, and there are many who will

be sorry to know that it will never again be reflected in life's mirror. Mr. Todd was found dead on the morning of December 24th, in a small room adjoining his offices at 149 State Street. He laid on the floor with a pillow under his head, and a rubber hose leading from a gas fixture in another room through the keyhole told the story of suicide. The night before, Mr. Todd, with other employees of the company, were working late on account of the Christmas rush. About 11 o'clock they left him alone at the store, he saying good-bye to them all, and telling them he would stay unusually late and finish some work in hand. These were the last words he spoke. The next evening, Christmas Eve, his wife was to have joined him after a six-weeks' visit to their former home in Wolcott, Conn. Mr. Todd's sad death brought a shock to the hundreds of Chicagoans who had known him in club life, in movements toward trade organization and trade reforms, and in the world of business. Those who knew him well declare that he was one of the best types of modern business men in our trade. This has been the burden of expression of sorrow heard all through trade circles since his untimely taking off. Mr. Todd was a native of Connecticut and came here in 1884 as manager of the Towle Company's branch, which was established in Chicago at that time. He was

50 years old and is survived by his widow. For the last ten or twelve years he has lived in La Grange, one of our western suburbs, where funeral services were held the afternoon of Thursday, December 26th, at 4 o'clock, which were largely attended by members of the trade, the Chicago Jewelers' Association attending in a body in charge of President Talbot. His remains were taken to Waterbury, Conn, that night, Mrs. Todd accompanying them, where they will be laid close beside those of his parents at 2 P. M. to-day. Mr. Todd was a member of the Chicago Athletic Club almost from its inception and one of the most popular of the jewelry contingent in that organization. He was vice-president of the Suburban Club of La Grange, and though not a communicant of the Baptist Church of his home town, he took a warm and helpful interest in its welfare and was greatly esteemed by the membership.

Many are the expressions of sorrow throughout the trade. Said Elmer A. Rich, of the Rich & Allen Company, who has long been Mr. Todd's most intimate friend and neighbor: "He was one of the best types of men I ever knew. He was a man of natural refinement and unusual intellect. With these splendid qualities were coupled a kindly disposition, a desire for usefulness and the highest spirit and ideal of citizenship. He never shrank from any duty that devolved upon him, either of a personal or a public character."

"I had known James A. Todd intimately almost from his first coming to Chicago," said Harry M. Hyman, of Hyman, Berg & Co. "I am deeply shocked and grieved over his death. He was one of the most genial and valuable men the jewelry trade of Chicago could claim. He was unselfish, public spirited, energetic, sociable, and a type of man whom every one might observe and be benefited. His death is a great loss to the trade."

J. W. Neasham, the well-known jeweler of Ottumwa, Ia., writes to a friend here upon hearing of Mr. Todd's death: "I felt closer to him than with any other man with whom I do business, and I had the highest respect for him. In his death I feel that I have lost a very dear friend, and Mrs. Todd has my deepest sympathy in her sad bereavement."

"My acquaintance with Mr. Todd was largely in a business way," said C. H. Knights, of C. H. Knights & Co., "but I had always classed him as among my warmest business friends. He was a man of rare energy, of definite and pronounced judgment, though tactful in expressing. His death is to be greatly deplored."

George E. Feagans, the well-known jeweler of Joliet, Ill., who was at the funeral, said: "When James A. Todd passed away I lost my best business friend, and I am grieved beyond measure over his untimely death. Outside of my immediate family I esteemed him as my closest and warmest friend."

The friends and business associates of Mr. Todd are at a loss to give any direct reason for his act. About a year ago he suffered from a severe siege of nervous prostration, and has not been himself since.

For a month before his death Mr. Todd worked from 7 o'clock in the morning until late at night, sometimes until midnight, as the business of his company has been heavier this holiday season than ever before in its history, and sleeping in down-town hotels instead of going to his home at La Grange. It is thought that this close confinement to his duties, and the extreme nervous strain he was under caused him to become mentally unbalanced.

(Continued on page 39)

To All Our Customers,
To all who may become such, and, in fact,
To the Entire Trade, Everywhere,
We extend our sincere wishes for a

Happy New Year

With a booming business and
A full measure of prosperity.

J. W. FORSINGER
WHOLESALE WATCHES

Columbus Memorial Building
Chicago

Our Specialty during 1902 will be
WATCHES, as usual,
And we ask a share of your mail orders

Chicago News

(Continued from page 37)

Out-of-town Visitors

Jeweler P. W. Clark, of Rensselaer, Ind., was in town the early part of the month on a purchasing trip and found time to drop in at KEYSTONE headquarters and say that he was anticipating a better trade this December than last and that he was making preparations accordingly.

Frank Lines, of Sault St. Marie, Mich., was in the Chicago market for a few days in the early part of December replenishing his stock for the Christmas trade. Jeweler Lines remarked while here that they were looking for an extra fine holiday business in the northern country for the reason that the indications all pointed that way.

W. E. Clingenpeel, of Carbondale, Ill., was in town for a few days the early part of the month selecting goods for the holiday season and was buying liberally.

Jeweler A. E. Mathews, of Odebolt, Iowa, and wife, were in the Chicago market for a few days the early part of the month buying liberally in holiday lines.

J. W. Van Dorn, of Minonk, Ill., paid a hurried visit to this market the middle of December on the lookout for holiday goods. He reports that the holiday trade began earlier than usual this season and he was of the opinion that it would be a record breaker.

E. A. Neubauer, of Iron Mountain, Mich., was in Chicago the early part of the month selecting goods for his holiday trade.

T. J. Howe, of Louisville, Ky., was a trade visitor in the Chicago market the early part of December making liberal purchases for the home store.

Tenth Anniversary Dinner of the Pottery, Glass and Brass Salesmen's Association

There may be other trade "banquets" that cost much more per plate, and where the claw-hammer coat is more *a la mode*, but it is doubtful if any of these will furnish the real warm time that marked the tenth annual dinner—not banquet—of the Pottery, Glass and Brass Salesmen's Association that was held at Mouquin's, New York, on the evening of December 27th. The hour named, 6.30, brought most of the diners directly from the office, as these gatherings are understood to be more or less informal.

Some of the "boys" had gone off early and donned evening dress, but they were the exception, for the understood rule was enjoyment rather than "form." After a brief hour was spent in greetings and reunions of congenial spirits, whose business had parted them for weeks or months, they unceremoniously arranged themselves at the small tables of the dining hall, and for two hours were occupied in doing justice to the fare of this well-known resort. By this time the company were in prime condition to do full justice to the varied and elaborate programme that had been arranged. Encores were numerous, and President O'Gorman had to keep things moving every minute of the time to reach the end of the list a short time before the midnight hour. In fact, the popular president, recently selected for another term, had a busy, very busy evening. Presiding at a Gridiron or Clover club event, the famous dining clubs of Washington and Philadelphia, is an easy thing compared

with regulating the wit and actions of a hundred or more well-dined salesmen, and woe to the speaker who left an opening for the shafts of these bright, experienced chaps, with their keen knowledge of men and events.

While the coffee and cigars were being served, President O'Gorman arose, and after briefly referring to the work and progress of the association during the past year, presented a fine diamond pin, on behalf of the association, to W. H. Dunn, of the Owen Pottery Company, for having enlisted the greatest number of new members during the year, sixteen in all. The members gave Mr. Dunn the glad hand in earnest, and he modestly expressed his appreciation of the handsome gift in a few words. Then the first toast of the evening, a standing, silent one, was drank, and while on their feet all joined heartily in the grand chorus, "America." The other events were as follows:

Vocal Duet—"Burial at Sea"

Messrs. Con. L. Meyer and George S. Smallwood.

Address—"Brotherly Love"

E. F. Anderson, Esq., President Crockery Board of Trade.

Violin Solo—"Scotch Rhapsodies"

Master Roland Meyer.

Bass Solo—"Flight of Ages" . . . Con. L. Meyer.

Address—"The City of New York—The Gateway of the World," . . . Hon. Moses Oppenheimer

Comic Vocal Selections—"The Real Thing,"

James O. McLaughlin

Short Stories—"A Few Minutes with the Irish,"

Geo. S. Smallwood

Address—"The Salesman," James D. Bergen, Esq.

Violin Solo—Cavatina . . . Master Roland Meyer

Bass Solo—"How Fair Art Thou," Con. L. Meyer

Address—"The Press,"

Col. E. C. Stahl, Trenton, N. J.

Stunts on the Piano . . . James O. McLaughlin

New Yarns—Rare Bits, Vice-President H. B. Moses

The success of the dinner was due to the untiring labors of President O'Gorman and the banquet committee, made up of the following: Henry Endermann, John Nixon, Geo. F. Mackey, W. H. Dunn, Con. L. Meyer.

Tribute to the Drummer

The Philadelphia Times of December 16th said, editorially: "It is not the nicest word in the language, but drummer seems to fit the man who is after business, and with Americans who like to save time, it is preferable to commercial traveler. It is better than promoter, because, whether justly or unjustly, we need not discuss, a promoter is generally considered as one who is after more than a legitimate profit on a legitimate transaction. The drummer gives values for favors received. And he does a great deal more than that. He is the best agent of our modern civilization. He is the missionary of enterprise and the promulgator of knowledge. He stimulates laggard communities, supports the world's hotels, saves the railroads from annual bankruptcy, distributes the newest facts and keeps the old stories moving. There is in his speech some of the best action of the times. He seldom hedges. He wastes little time. He goes to the point. He has purpose. The world's professional orators might sit at his feet with profit. And if he could only make his methods prevail in England the pictures of the House of Lords and the House of Commons would not show two-thirds of the members napping while some honorable gentleman has the floor."

Novel Title of a Jewelry Firm

In the jewelry business, as in other lines, we see very curious combinations in firm names. One of the most striking brought to our notice recently is that of Ira A. Smith & Daughter, jewelers and opticians, York, Nebr. Mr. Smith has been in the



jewelry business a great many years. Miss Smith graduated from the York High School in 1897 and at once went to work in her father's store. She at once went to work at the bench and by close application mastered the trade, at which she is now constantly employed. In addition, she has a thor-



ough knowledge of optics. About a year ago the above-named firm was organized with Miss Smith as full partner. Miss Smith takes an active part in the buying, and is a good judge of quality and prices of goods. She thoroughly enjoys her work and thinks that the search for the mysteries of an escapement is far more interesting than the search for the derivation of a Latin word.

The Joke Was On the Deacon

Mr. B— is one of the church wardens in a prominent city parish, and it was his custom Sunday by Sunday to pass the plate for the offerings of the congregation. On the occasion of a visit from the bishop, Mr. B— took up the collection as usual, and as he was walking up the aisle he put his hand in his pocket and placed what he thought was a dollar on the plate. But, alas, it was a tell-tale blue poker chip. Noticing his mistake as he handed the offering to the bishop, Mr. — waited until after service and then hurried into the vestry room to rectify his error. Very much embarrassed, he told the bishop how he had intended to put in a dollar, and that the chip had gotten there by mistake. He now wanted to make the change. "Ah! but my dear sir, *blue* chips are not generally redeemed for one dollar. Add in the other nine and we won't tell on you."

And Mr. B— cashed in.

"All your articles are good. In fact, I think I get more for my money in The Keystone than anything else I purchase."—S. R. Razee, Jeweler, Curtis, Nebraska.

40
EDWARDS & SLOANE JEWELRY CO.
 BOX 1108 KANSAS CITY, MO.

JEWELERS who desire to
 "Get their money's worth"
 should see that the tags
 on the Watches, Jewelry
 and Material which they
 buy are stamped with a
 fac-simile of the trade-mark
 herewith illustrated.

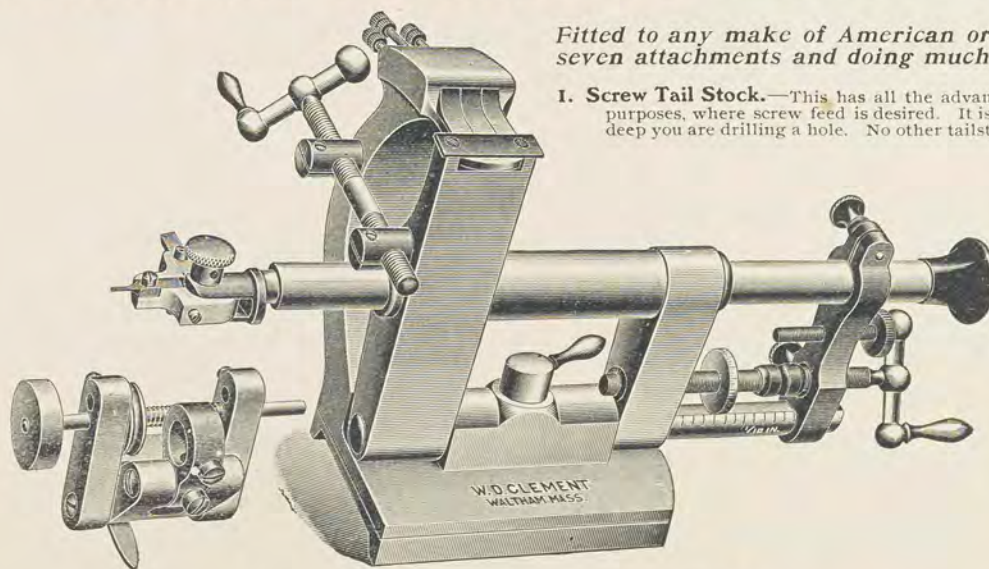
*Our guarantee goes with all goods
 marked with this trade-mark.*



EDWARDS & SLOANE JEWELRY CO.
 BOX 1108 KANSAS CITY, MO.

Clement Combined Lathe Attachment (for Watchmakers)

Fitted to any make of American or imitation American Lathe. Replacing the following seven attachments and doing much work which cannot be done with them.



1. Screw Tail Stock.—This has all the advantages of the tail stock, besides being useful in drilling and for many other purposes, where screw feed is desired. It is graduated to 1-1000 of an inch, so you can tell by thousandths of an inch how deep you are drilling a hole. No other tailstock that we know of has the above-mentioned valuable features.

2. Tail Stock.—This can be used either on or off center, and either straight in line or at an angle.

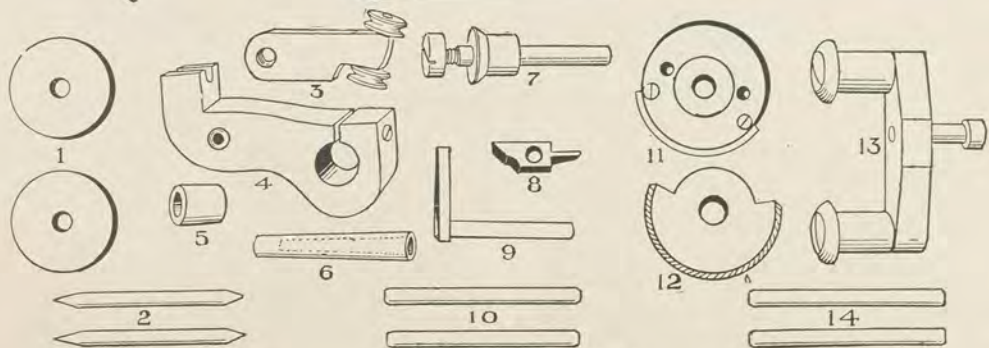
3. Filing Fixture.—This does the work of the regular filing fixture, besides being able to file a taper which cannot be done by any other filing fixture on the market.

4. Roundingup Tool.

5. Pivot Polisher.—This can be used straight in line, at right angles; also at right angles in an oblique position, so that the workman looks directly between the work and polisher without changing his position.

6. Slide Rest.—This has the cross feed and rear feed, is indexed for taper cutting, etc., very substantially built, and capable of doing very heavy work. This has the advantage over regular slide rests, in that, after using at a taper, and setting straight in line, a taper pin fits a hole so it must be perfectly straight in line, cutting the same size all the way; on other rests you have to depend on your eye to set it straight.

7. Swing Rest. Jeweling caliper, with cross feed, rear feed, indexed in degrees, for setting or sizing on taper; also fitted with Clement's Combined Outside and Inside Jeweling Cutter.



PATENT ALLOWED JUNE 24, '01.

Price, Fitted to any Lathe, \$40.00
STRICTLY NET.
 Replacing Tools Costing \$160.00.

See "Keystone" November, 1901.
 Send to us for complete illustrated catalogue.

W. D. CLEMENT
 Waltham, Mass.
 OR ANY JOBBER.

Birmingham, Ala., Letter

The Christmas rush is on and the jewelers above all other business men are worked to death. This is the greatest holiday season in the history of the South. Shortly before Christmas THE KEYSTONE correspondent paid a visit to all the stores of the city and found in every case the houses crowded with customers. At F. W. Bromberg's there were half a dozen extra clerks and the bench men had deserted the repair departments and gone into the stocks. This was also the case in the big store of Abbott Brothers, which has just been finished up at a cost of several thousand dollars. At the Calhoun jewelry store the aisles were taxed to their utmost and Manager Gaines and his assistant, William Rosenstihl, who, by the way, is secretary of the Alabama Retail Jewelers' Association, with a large list of helpers had all they could do. The Calhoun house here is a branch of the Nashville house of the same name, but the business here has grown so that it would seem now another case of the tail wagging the dog. J. Lowinsohn, who makes one of his specialties the handling of pottery and vases of all kinds and the handling of silver novelties another, has his big store crowded with helpers and goods and customers. P. H. Linnehan, who serves at odd times on the Board of Aldermen, has his new store in the big Hillman Hotel Block a blaze of beauty and a busy hive of industry. A. S. Smith, who has recently moved to a new location on Nineteenth Street, has lost none of his friends and keeps crowded where he is now; and F. S. Jobson, who moved back to the Southside last October, is doing his old business this busy season.

There is a reason for the good business this season. This section is exceptionally prosperous. The thousands of workmen in the district have had a good year at the best wages ever known and the merchants have felt the impetus. There was never a Christmas in the State when people had so much money to spend.

The failure of George J. Alston, at Tuscaloosa, a few days ago, marks the first suspension of any consequence in the State for some time. Mr. Alston has been a leading jeweler at Tuscaloosa for several years and his hard luck is greatly regretted by all who know anything of his clever way and engaging manners. J. J. Alston was made assignee.

Harry Mercer, of this city, died December 22d, while the holiday rush at his store was at its height. The deceased was raised in Philadelphia and went South in '76, starting in the jewelry business at Ophelika. In '81 he came to Birmingham, where he continued in the same business, and met with much success. He was fifty-four years old.

A. W. Lebron, who has a jewelry store at 14 Dexter Avenue, Montgomery, is branching out. He has added greatly to his stock and to his repair and manufacturing departments.

F. W. Bromberg, who succeeded to the business of E. Gluck, has two handsome pieces of work for the local Elks' lodge that he will turn out in a few days. They are among the most elaborate ever attempted in a Southern shop. As they are to be given as surprises, no details can yet be printed.

Jewelers are more or less interested in the action suggested by the police board requiring all pawnbrokers to turn in a list each night of the goods taken in by them, in order that the police may overlook them and see if they are stolen. As most of the pawnbrokers handle jewelry, the effect of the order, if such is issued, will be watched carefully.

As an instance of the good business, the following conversation between THE KEYSTONE representative and a leading city jeweler may be repeated:

"How is your trade as compared to last year?"

"About twenty-five per cent. greater."

"Was last year a good one for your lines?"

"The best the city has ever known."

Trade Notes from Germany

The Title "Goldsmith"

At the last meeting of the business committee of the Deutscher Uhrmacher Bund, in Berlin, action was taken on several questions of general interest, not alone to German trades people but also to American tradesmen. The first question which was discussed at length by the members of the committee was the case of a watchmaker in Neisse, who is threatened by the jewelers of that town with complaint to court if he continues to use the name "goldsmith" on his business cards, boxes, advertisements, placards, etc. The jewelers claim that he has no right whatever to use this title, even if he does take in and repair jewelry and gold goods. According to their idea, only one who has gone through a necessary apprenticeship and received his master-workman diploma in any particular trade can call himself goldsmith, silver-smith, etc. The watchmaker, being in a dilemma as to what he should really do in the case, communicated the facts to the Uhrmacher Bund, with the request for advice. After deliberation it was decided to support the watchmaker in the stand he had taken, and he was told to continue to use the title in spite of the threats of the jewelers, and if the case should come to court the Bund would support him financially. The matter is now resting, as a result of the firm stand taken by the Bund.

Unfair Valuation of Goods

The second case considered by the committee of the Bund at its recent meeting was the report of Carl Marfels, presiding member, to the effect that many watchmakers have complained of late of unfair taxation of goods bought of them, and afterwards taken to other tradesmen for the purpose of valuation, in which case the competitors frequently give information which is very untruthful and much to the disadvantage of the man in whose shop the goods were purchased. Such cases can be hurtful to a man who is fair and honest in every respect, and the opinion of the members present was that immediate action should be taken to stop the valuation of new goods in stores other than those in which they were purchased. A circular was accordingly written, which is to be sent to all members of the Bund, advising them if possible to avoid all such taxation, except in the case of the article being an heirloom or an old piece of goods, or in the case of a friend where the watchmaker is sure that he can do no one harm by it. The president also advised the printing of placards, reading, "In accordance with the decision of the Deutscher Uhrmacher Bund I decline henceforth to put a value on new goods purchased outside of my store," which met the approval of the committee and was at once agreed to and the placards ordered. They will be immediately forwarded to all members of the Bund for prominent exhibition in their stores. While the idea is a very good one in itself it will, no doubt, touch the proper spot; for the class of trades people who undervalue the goods of an honest

tradesman and thereby seek to destroy his reputation will exist, no doubt, as long as the sort who have no bad intention in mind and do not stoop to such tricks to do their competitors an injury.

Up to date, over twenty watchmakers have been rewarded with five marks each for causing the arrest of peddlers infringing on the new laws in selling watches and clocks from house to house. This reward is being paid by the Deutscher Uhrmacher Bund and is still standing. The good effect of the strict enforcement of these laws protecting merchants are being praised on all sides, and there has been a sudden end to the many peddlers who were ruining business in some parts by going from house to house with their wares; which were, in most cases, not worth the stuff they were packed in.

A new concern, calling itself "The Watch and Clock Repair-Insurance Institute Hammonia," in Hamburg, is directing attention to itself in trade circles and, at the same time, creating much anxiety among the watchmakers. It is, curiously enough, just as the name implies, a repair-insurance institute. For a yearly premium of two marks it will insure your watch or clock against all breaks, even of glass or hands, and will repair any damage or break free of charge. No doubt the concern will do a good business, and it will be a serious competition for the watchmaker if it should spread to other places outside of Hamburg. The watchmakers in that city are taking steps against it, as it has not complied with the insurance laws and is, therefore, an unlawful concern. The Watchmaker Bund has also taken a stand in the matter, and has placed it in the hands of its attorneys.

G. Spatz, the oldest watchmaker in Germany, celebrated his birthday recently. Mr. Spatz lives with his children in Bremen and is still at the bench, in spite of his eighty-four years of age. He is in the best of health and very active. Mr. Spatz was formerly watchmaker to the court of Erbach (Odenwald).

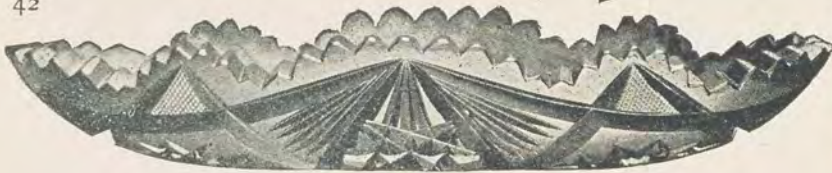
In his advertisement in the local paper of a small town in Alsace-Lorraine, a French watchmaker claims to have cleaned and repaired 17,000 watches, and says the people were all well satisfied and bring them to him every two years to be cleaned and oiled. No doubt the poor man's head has been slightly affected by the sight of so many screws.

The firm of Koch & Co., in Elberfeld, has sent in a petition to the Bundesrath against the raising of the duty on watches and materials. There is doubt, however, if the petition will have the desired result, as the German Government seems decided upon raising the duty on these goods as well as on tools.

The newest talking machine on the market is called the Zonophon, and is a product of the firm of Herman Schilling, Berlin. The advantages claimed for this machine are that the winding crank is conveniently located on the side, and the driving mechanism is worked by a "spring motor," which can be wound up during the playing of the instrument, without interrupting the playing in any way. The fork and horn holder, which are made of wood, on the gramophones, are here made of nickel-plated metal. The case is of oak.

We are in receipt of the yearly price-list and catalogue of the firm of Richar Lebram, in Berlin. The catalogue is quite large and contains over 4500 illustrations of rings, brooches, pins, buttons, ear rings and various silver novelties.

A new jobbing firm under the name of Wunderle & Co. has opened a business in Stuttgart. They make a specialty of watches, also alarm clocks, traveling clocks, regulators, cuckoo clocks, etc.



No. 384. Celery. Portland.

The manufacturers of the well-known and now famous

WAVE CREST WARE

have a great surprise for their customers in their new line for 1902.

Old shapes and designs have been discarded. A new and complete line of novelties of the most taking and striking character will be put before the public this year. Destined to be as great a winner and as popular as their former line. An entire new line, never shown before, of **RICH CUT GLASS**, that cannot be surpassed for brilliancy and quality of goods. Do not fail under any consideration, to send in your request for catalogues to be mailed you when gotten out. They are now in the works.

The C. F. Monroe Co.

New York Salesrooms,
28 Barclay Street.

Manufacturers of Wave Crest Ware,
Rich Cut Glass,
Wedding and Holiday Novelties,

Offices and Factory, MERIDEN, CONN.

Address all communications,
remittances, etc., to Meriden, Conn.

Kindly mention THE KEYSTONE.



2 Pt. No. 575. Jug. Prism.

10-inch Trumpet Vase.
Niagara.

No. 358 KP. Vase.

1 Pt. Hdl. Decanter.
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"South Bend" Demagnetizers

Patented
January 29, 1901



For DIRECT and
ALTERNATING
CURRENTS

Order from
Your Jobber

PRICES:
For Direct Current, \$15.00
For Alternating " 5.00

THE MILLER-KNOBLOCK ELECTRIC MFG. CO., South Bend, Ind.

New Polishing and Grinding Machine

This machine is designed especially to meet the demands of the jeweler. It will carry emery and buffing wheels up to 6 inches in diameter, and with perfect ease speeds to 2500 revolutions a minute.

Economy of space reduced to the minimum.

We also make a line of Foot-Power Lathes for heavy jewelry work.

SEND FOR CATALOGUE.

W. F. & John Barnes Co.

660 Ruby St., ROCKFORD, ILL.



ADOLPH MUEHLMATT

Maker of **Fine Tools and Dies** for the Trade

High-Grade Metallic Work Lion Building, Fifth and Elm Streets CINCINNATI, OHIO Monarch Engraving Blocks

MAX R. GREEN & CO.
301 MASONIC TEMPLE CHICAGO

Importers of PRECIOUS and IMITATION STONES
ROSE DIAMONDS DOUBLETS
OPALS WHITE STONES
PEARLS TURQUOISE
GARNETS ETC.

Send for Price-List

Atlanta, Ga., and Southern Notes

Condition of Trade

At this season every merchant in the retail line is busy, as a matter of course. However, it does not require an especially keen-sighted observer to see the most gratifying results of the prosperous conditions now prevailing. There has been a feeling of hope and confidence all along. The only disturbing factor was the wild reports of an eleven-million-bale cotton crop. When this was squelched by the Government report early in December, the feeling of security came back and trade prospered.

The weather was not as favorable to trading as it could have been up to December 15th. This was especially noticeable in the scarcity of country shoppers. But after the 16th, when the cold wave cleared the atmosphere and dried the street, trade improved with a boom. At the present writing we are enjoying ideal weather, and the crowded stores show how the people are taking advantage of it.

Looking forward, the future has never appeared brighter for the South than at present. With cotton advancing in price every day, and projects of a complete exhaustion of the surplus before another crop is grown, which means high prices next year, with the practical certainty of the isthmian canal being built, and the corresponding development of Southern ports and Southern industries, and with the many other advantages the section is enjoying, he would, indeed, be narrow-visioned that could not see a bright future ahead.

The Opening of the Charleston Exposition

The Charleston Exposition opened December 2d under the most auspicious circumstances. The ceremonies were imposing, including a parade of Federal and State troops and Confederate veterans, and a programme of exercises graced by Senator Depew and other distinguished speakers. Business was almost totally suspended in the city, the inhabitants turning out *en masse*, and the crowd, swelled by the thousands of visitors, was one of the largest that ever attended the opening day of an exposition. The occasion marked the beginning of a new era for the South and for South Carolina and Charleston in particular.

The exposition is well arranged, the buildings being stately, beautiful and picturesque. The warm genial atmosphere of the South Carolina coast, tempered as it is by the near flowing gulf stream, makes an ideal setting for a mid-winter exposition, and the uniqueness of the situation, combined with the real excellence of the display, is sure to make the undertaking a success in every particular.

A Normal Cotton Crop

The latest Government report has, in spite of the pessimistic views of both foreign and home spinners, strengthened the cotton situation. The report issued December 3d places the probable crop of 1901-02 at 9,674,000 bales, which is nearly a million and a half less than the most conservative estimate of a month previous. The almost immediate advance in prices is evidence of the confidence in the correctness of the Government report, and while there are, of course, some skeptics the consensus of opinion is that cotton will be very scarce, if there is not even a famine during the coming summer.

The exact figures of the Government report is as follows: Probable size of crop produced in the United States, 1901-02, 9,674,000 bales. Area picked or to be picked, estimated at 26,802,238 acres; a reduction of 730,216 acres, or 2.6 per cent.

from the acreage planted. The total production of lint cotton is placed at 4,529,954,000 pounds, an acreage of 169 pounds per acre.

The estimated production in States, in pounds of lint cotton per acre, is as follows: Louisiana, 260; Indian Territory, 214; Mississippi, 205; Oklahoma and Missouri, 196; Virginia, 176; Arkansas, 173; Georgia, 167; Texas, 159; Alabama, 156; North Carolina, 142; South Carolina, 141; Tennessee, 136, and Florida, 117.

Bench Work Abundant

The trade shops are, as usual at this season, overrun with work. They are working day and night and begrudging the necessary lay-off on Sundays. While the bulk of work is much the same as in previous years, there are many notable instances of articles being turned out of exceptional merit. The demand for special designs and hand-made diamond mountings is above the average. Brooches, pendants and buttons, to say nothing of rings of all sorts, are numerous, and the writer was fortunate enough to see several exquisite pieces of work in gem-set masonic and fraternity jewels, made in the local trade shops.

Trade Gossip

"What are you selling most of?" was a question addressed to a prominent jeweler a few days ago. "Diamonds of good color and watches," was the immediate reply. "Yes, sir," he continued, "there are more diamonds being sold in Atlanta this season than ever before in the history of the trade, and, as for watches, the demand is simply unprecedented." Only a short while ago a leading jeweler who thought he had an ample supply for the holiday trade, discovered that he was running short. Without any hesitation he ordered between seven hundred and fifty and a thousand movements, and as many cases. He paid cash for the lot and will undoubtedly dispose of the last one of them.

L. I. Stevens, of Jacksonville, Fla., who expected to get into his new store by November 1st, was unable to do so on account of his new store not being finished. The tremendous amount of building being done in Jacksonville since the big fire has brought about a material famine, and the contractors are unable to finish any of the buildings until a new supply of building material arrives. Mr. Stevens has store room in the book store of C. W. Da Costa on Bay Street, but is unable to do any business.

A company has been organized and chartered with a capital of \$10,000 at Bryson City, N. C., to manufacture wood and clay napkin rings and articles of like nature. The company is known as the Cherokee Napkin Ring Co., deriving the name from the Eastern band of Cherokee Indians, who have for years past utilized the wood and clay of Eastern North Carolina for making souvenirs. It is said the company will employ a number of these Indians in their factory.

A tragedy, resulting in the death of John Bollins, a well-known watchmaker of Harmony Grove, S. C., occurred at a shooting contest near that town November 30th. Bollins and Dr. Lanier, a prominent physician, had a dispute over a shot. Blows followed words and in the scuffle a pistol was fired and Bollins was fatally wounded, dying a few hours later. There is conflicting evidence as to who fired the fatal shot. Lanier was arrested.

Finney Bros.' store at Haddock Station, near Macon, Ga., was burglarized December 7th. The loss amounted to about sixty dollars' worth of cheap jewelry. The burglars attempted to blow open the safe, which contained a number of valuables, besides considerable cash. They bored in

and touched off the fuse, but the safe sustained the shock without any damage. The thieves then helped themselves to the jewelry left in the show case.

George Miller, alias Michael Mary, was arrested early in November at New Orleans on the charge of stealing a jeweled cigarette holder. He had on his person at the time of his arrest a gold watch case and a platinum chain. Miller turned out to be well known to the police, having been arrested previously on the charge of stealing a diamond, which it was alleged he swallowed.

In the case of the Lazarus Jewelry Co., of Macon, Ga., vs. S. W. Steinhardt, an appeal from the United States Courts; arguments were heard November 18th in the higher courts at New Orleans and the case submitted. On December 18th decision was rendered sustaining the lower court. It is held that the property of the Lazarus Jewelry Co. is subject to the debts of Max Lazarus.

H. Hauser, of Wilmington, N. C., who was arrested in August charged with setting fire to his own store in that city, was convicted and sentenced to serve a term of ten years in the State penitentiary. An appeal was granted, and bond fixed at two thousand dollars, which, however, was not forthcoming and Hauser was committed to jail.

W. L. Bryan, the oldest in point of service and one of the most popular clock men in the State, is with E. J. Kelley. Mr. Bryan has had charge of the city clocks for the past fifteen years, and the excellent time these wooden clocks keep is evidence of Mr. Bryan's ability.

J. P. Stevens, the well-known engraver, displayed during the past month one of the original invitations to President McKinley's wedding. It is a handsomely engraved sheet, gotten up and folded in the conventional style. While on exhibition it attracted considerable attention.

The Robertson-Hill Co., of Dallas, Tex., whose formal opening occurred December 4th, announced the event in an attractive invitation to the public in the form of an eight-page booklet. The new establishment is the outgrowth of the business of T. D. Robertson.

Abe Fry has returned to his old stand on Peachtree Street. The house Mr. Fry is now in is a new one, having been erected in conjunction with the new viaduct, which it faces, and he has in every respect a first-class and up-to-date store.

The Hawkes Optical Co. have returned to their old stand on the Whitehall Street end of the new viaduct. They have been in temporary quarters at 108 Peachtree Street, during the erection of the viaduct and the new building they are now in.

Mercer Quarles, a prominent jeweler and the senior member of the firm of Quarles Bros., committed suicide December 17th by shooting himself with a revolver. Despondency is the only known cause of the deed.

Greenleaf & Crosby Co., of Jacksonville, Fla., were considerably delayed in getting into their new quarters. They expected to get in by December 1st, but were unable to do so until the 15th.

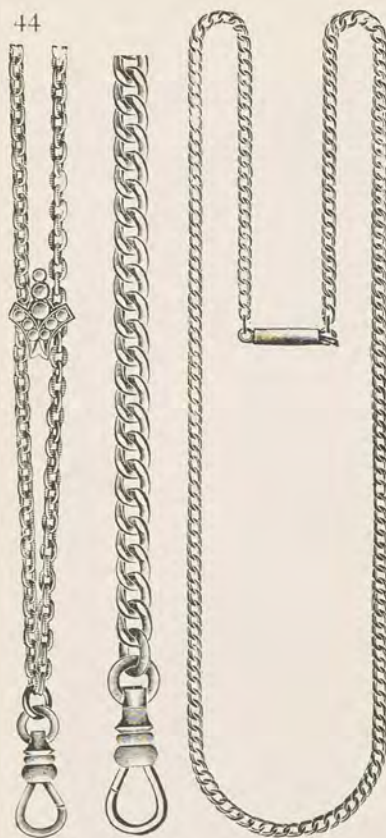
A. L. Delkin, the well-known Atlanta jeweler, is receiving the congratulations of his friends over the advent of a little daughter at his home. THE KEYSTONE extends its congratulations.

Thanksgiving Day was generally observed by the jewelers in Atlanta. Several of the stores were closed all the day, and those that were not, closed during the afternoon.

G. R. Youmans, Waycross, Ga., has been appointed chief watch inspector for the Plant System. Mr. Youmans was recently elected mayor of his town.

(Continued on page 45)

44



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1030

6160 / 0445

Our 1902 Spring Styles are Complete

WE ARE READY FOR BUSINESS

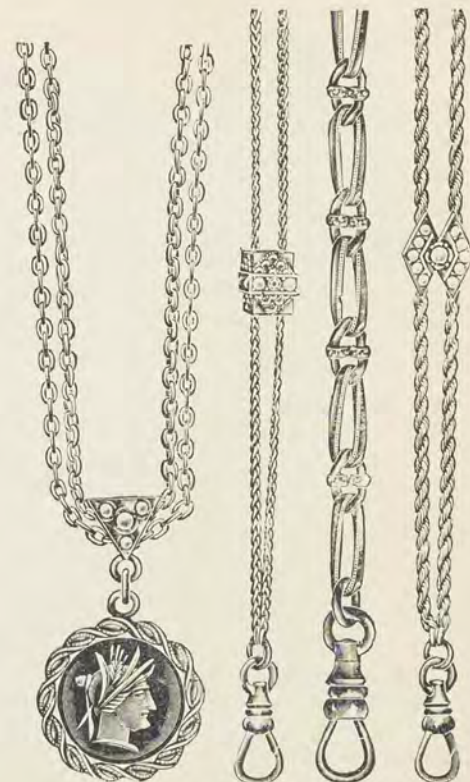


SEAMLESS GOLD FILLED CHAINS in All Styles

Don't fail to see our New Line of
LOCKETS

Our line is not excelled in price,
variety or beauty

WE MAKE
EXCELLENT GOODS ONLY



2089 / 0374

738 / S 572

2398

784 / S 434

Purchase CHAINS from your jobber that are made from SEAMLESS FILLED WIRE
EXACTLY AS REPRESENTED, by the well-known and reliable Chain house of

C. A. Marsh & Co., Attleboro, Mass.

Fine Finished Goods Sell Themselves

If you are looking for BEAU-
TIFUL GOODS, ask for those
with this trade-mark
and see that "C.A.M. & Co."
is stamped on the swivel of the
Chains you buy.



Trade-Mark

Some Facts in Regard to our Watch School

We will give you an education along the lines of Watchwork and its kindred trades so complete that you can hold a position after it is secured for you. We do not offer a lot of impossibilities. We cannot teach you all there is in the several escape-ments in two hours, nor can we teach you Engraving and Jewelry-work in three days or less, but if you want to get a good, thorough knowledge in these different branches, we can give it to you from foundation to pinnacle. We do not require you to make a watch, but that you should be able to make one there is not the least question, for if you cannot make the several parts how are you going to supply those parts when missing? Rely on someone else? That won't do, for half the people you rely on will not or cannot give you the correct solution. There is only one royal road to the top, in any trade, and that is to put yourself in possession of all the points pertaining to that trade, so that you do not have to rely on others. There is a certain class of people who will always ignore theory for the simple reason that they know nothing of it themselves, yet in this day and age we know that the man with the technical knowledge accompanied with practical work, is the one who gets the high positions. This is the kind of workmen we turn out. We give you a course of lectures in theory, that you may know and can figure every part of a watch, and thoroughly understand the action of these parts, else you are not the man to repair these same parts when out of order. These lectures consume no part of your time in school hours, as they are given at night sessions. Eight hours every day we require you to give your attention to practical work, doing everything required in a jewelry store, but not as some of these workmen do it in some of these stores. We require that it shall be executed in a workmanlike manner, and will see that you can do it that way before you are permitted to leave it.

Now which do you choose, just a smattering, just a dabble, here and there in Watchwork, Jewelrywork, Engraving, etc., or a good, thorough knowledge, from start to finish, so that there is not the least possible chance to fall down?

When you go out of our institution with a recommendation **YOU ARE POSTED**, and cannot only get a job, but can hold it, as nearly two thousand of our students can testify. Now is the time for you to consider and decide.

SEND FOR OUR CATALOGUE, which we will gladly furnish.



HOROLOGICAL DEPARTMENT
Bradley Polytechnic Institute

(Formerly "Parsons' Horological Institute")

Peoria, Illinois

Pittsburg and Vicinity

Immense Holiday Business

At the present writing the holiday-buying season is at its height, and from the thronged appearance of the stores and the expensive lines of goods which are ready sellers, one judges that money is circulating freely in this locality. There is an almost incredible amount of money, realty and like valuable interests controlled by the population of this burg, and its owners have been awake to the fact for some time that there is nothing so conducive to the health of a community as a free and lavish circulation of its currency. Pittsburgers are a free-and-easy lot, whose vast riches have been made in an astonishingly short time, and in prosperous times there is a general loosening of purse strings. The season of 1901 is showing up marvelously well, and predictions are that at the close of the year there will be heavy balances displayed on the right side of the ledger. All clerical and factory forces are having a spell of night work.

A most suggestive evidence of the vast volume of ante-holiday business was the inability of the railroads to handle the freight at this and other western points. Everything available in the way of rolling stock was forced into service, but there was delay nevertheless and much complaint by manufacturers as to the non-delivery of material.

High Quality Goods

From the wonderful run on watches a year ago, it would seem that everyone in the city were the possessor of a time-piece, but not so, judging from the run on watches, of best movements, too. Art goods, diamond harvest moons and crescents and La Valliere chains are very popular. Of course there is always a demand for novelties, but the call for beautiful and expensive goods attests the development of the former "provincial" taste of the Pittsburger into the effete desires of the sybarite.

After the holiday rush is over, the thoughts of many of the jewelers will be diverted from money-getting to the more serious problem of re-leasing their present quarters or seeking as well-situated stores. The uncertainty of retaining leaseholds or renewing the same, has been a serious question for the past three years, and those jewelers who are the possessors of long-time leases are deemed fortunate by their less-favored brothers-in-trade. Heretofore the trade has been confined to one street in the city, Fifth Avenue, but the many new skyscrapers, whose first floors are being taken by banks and trust companies, are rapidly driving shops to the cross streets, now becoming popular thoroughfares. Many of the jewelers have found it absolutely necessary to secure quarters beyond the ground floors at fabulous rents in order to be on the main business street of the town.

The A. E. Siviter Company, of this city, was chartered at Charleston, W. Va., on December 10th, to acquire and conduct the jewelry business now carried on by A. E. Siviter & Co. The capital is \$100,000. The incorporators are A. E. Siviter, Francis P. Siviter, Thomas Siviter, Mary B. Siviter and Elizabeth B. Siviter.

An electric wire set fire to some waste paper in the cellar of L. W. Vilsack & Co.'s store on Fifth Avenue about 7 o'clock in the evening. A still alarm was sent to Chemical Engine Company No. 1, and the blaze was quickly extinguished.

James Johnson, recently with E. P. Roberts & Sons, is now with Heeren Bros. & Co.

The firm known as S. Hantman & Bro., afterward changed to A. & L. Hantman, at 1422

Wylie Avenue, was dissolved on December 4, 1901, by mutual consent, L. Hantman retiring. The business will continue at the present place under the name of Ab. Hantman.

Accounts were filed by the trustee in the estate of George W. Biggs & Co., bankrupts, which shows \$1,515.27 in the hands of the trustee for distribution. A hearing has been set for January 1st, to settle the rate of dividend.

The Keystone Jewelry Company, on Fifth Avenue, is holding an auction, preparatory to removal. The new Wabash road has purchased the building, and the jewelry company sold its lease.

Two well-known local jewelers were bereft of their children during the past month. O. C. Graf, of Graf & Niemann, lost his son William Reams, and Al. Covert's little daughter Helen died after a short illness. The sympathy of THE KEYSTONE is heartily extended.

W. O. Weniger, of Frankstown Avenue, east end, has been holding an auction sale during the past month to deplete his stock.

Charles Davis, formerly of Galion, Ohio, represents Albert H. Gerwig on the road after Christmas.

Sam. Hall, recently with A. H. Gerwig, replaces H. S. Hurlbut as traveler for the W. J. Johnston Jewelry Company in the West.

Congratulations have been showered upon James R. Brown, of Marsh & Brown, on the arrival of a young jeweler in his family, the second son of the Brown family.

The Wade Jewelry Company, of East Liverpool, Ohio, is holding an auction sale.

H. W. Clees, formerly with the Pittsburg Jewelry Company, has accepted a position with Hardy & Hayes.

Albert H. Gerwig, who has conducted a successful jewelry and material establishment in the Verner Building for many years, is now located at the corner of Wood and Diamond Streets.

Among the many jewelers from near-by towns who bought stock in this city during December were: T. N. Smith, Morgantown, W. Va.; W. J. McKinney, East Liverpool, Ohio; Ed. Koessler, New Kensington, Pa.; J. W. McKean, Charleroi, Pa.; F. D. Skiff, Verona, Pa.; Fred. W. Laban, Steubenville, Ohio; T. H. Wilson, Niles, Ohio; H. R. Brown, New Brighton, Pa.; H. A. Reed, Greensburg, Pa.; Fred. Patton, Monaca, Pa.; C. L. Clark, Connellsville, Pa.; Jerry Benninghof, Greenville, Pa.; L. C. Gressel, Mahoningtown, Pa.; A. W. Bishop, Connellsville, Pa.; J. M. Roland, Greenville, Pa.; F. W. Spahr, Tarentum, Pa.; James Corbett, Sharpsburg, Pa.; T. Farmer, South Oil City, Pa.; H. A. Bennett, Homestead, Pa.; M. S. Nieman, McKeesport, Pa.; J. P. McDonald and A. Merz, Sewickley, Pa.; John Linnenbrink, Rochester, Pa.; John Slonecker, Scio, Ohio; M. R. Shingler, Wellsville, Ohio; J. D. Swank and Mr. Casebier, Somerset, Ohio; T. H. McNary, Washington, Pa.; H. H. Weylman, Kittanning, Pa.; H. A. Reineman, McKeesport, Pa.; F. F. Robinson, Vandegrift, Pa.; H. S. Johnston, Apollo, Pa.; Charles Hart, Sharon, Pa.; R. H. Wolf, Smithton, Pa.; T. A. Robinson, of F. A. Robinson & Son, Clarksburg, W. Va.; J. W. Caler, Beaver, Pa.; H. A. Reed, Greensburg, Pa.; P. J. Manson, Jeanette, Pa.; Harry Furtwangler, Greensburg, Pa.; F. H. Marshall, Derry, Pa.; E. H. Schaefer, Beaver Falls, Pa.; Charles Langnecker, New Brighton, Pa.; G. R. Patterson, East Liverpool, Ohio; F. B. McKinley, Washington, Pa.; E. W. Hull, Warren, Ohio; J. E. Miller, Glen Campbell, Pa.; J. H. Hoffman, Latrobe, Pa.; N. C. Nevile, Conneautville, Pa.

Atlanta, Ga., and Southern Notes

(Continued from page 43)

W. C. Sherman, a jeweler of Orlando, Fla., has invented a ladder, designed to be used on sleeping cars and steamboats to facilitate reaching the upper berths.

A patent on a new design belt buckle has been secured by James F. Lane, of Jacksonville, Fla., and assigned to Greenleaf & Crosby Co. of that city.

J. E. Kennedy, of Athens, Ga., was in the city during the month. Mr. Kennedy expects to leave shortly for the West.

The store of Davidson & Wardlaw, of Oxford, Miss., was damaged by fire recently. The loss amounted to about \$5000.

A. J. Smith, of Alexander City, Ala., has opened a jewelry stock at Coley's drug store, that city.

Lem. Clark, a well-known watchmaker, has gone to take a position at Little Rock, Ark.

A fire occurred in the store of R. B. McLean, Dillon, S. C., recently. The damage was slight.

C. A. Buchanan, formerly with Davis & Freeman, Atlanta, has accepted a position at Salt Lake City, Utah.

J. E. Whitlen, a well-known jeweler of Ensley, Ala., has put in a stock of optical goods.

Mr. Ernest, a prominent jeweler of Palatka, Fla., has moved into new quarters.

E. V. Alcorn, a well-known traveling man, is assisting E. J. Kelley during the holidays.

The Stribling Drug Co., of Greenville, S. C., has put in a nice line of jewelry.

John A. Humphries, Ensley, Ala., spent several days in Atlanta during December.

C. L. Kinsbrough, of Carrollton, Miss., has opened a branch store at Cordell, Okla.

F. H. Mangliers, of Gonzales, Tex., has just closed a successful auction sale.

A jewelry store has been opened at Ensley, Ala., by W. V. Prince.

Louis Selig, Elizabethtown, N. C., has returned from a trip to New York.

Migel & Krulewich, Galveston, Tex., have opened a branch store at Houston, Tex.

Johnson's jewelry store, at Jacksonville, Fla., was slightly damaged by fire recently.

S. L. Byrd, of Weatherford, Tex., has sold out to Dutton & McEver.

W. W. St. John, of Roswell, Ga., has enlarged and improved his store.

Paul Keener, of Palatka, Fla., has moved into new quarters.

F. F. Wesley, of Lithonia, Ga., has moved into new quarters.

F. B. Weihe, Ocala, Fla., has opened an office at Brooksville.

B. Schmidt, formerly of Houston, Tex., has removed to Ohio.

The advent of the holiday season cut down the number of Southern jewelers visiting the East; among the most noted were H. G. Adams and wife, Tampa, Fla.; G. A. Leod, Chattanooga, Tenn.; F. N. Day, Winston, N. C.; Miss Doyle, New Orleans; V. J. Pekor, Columbus, Ga.; L. H. Jerger, Thomasville, Ga.; Louis Selay, Elizabethtown, N. C., and Mr. Thomas, Knoxville, Tenn.

Out-of-town visitors noted during this month were W. G. Conn, Milledgeville, Ga.; F. G. Dodd, Fairburn, Ga.; J. P. Sain, Acworth, Ga.; Mrs. V. W. Skiff, Athens, Ga.; J. E. Kennedy, Athens, Ga.; Mr. Fowler, Franklin, Ga.; W. W. St. John, Roswell, Ga.; J. A. Humphries, Ensley, Ala.; G. R. Youmans, Waycross, Ga.; B. F. Sawyer, Ellijay, Ga., and H. J. Garrison, Winder, Ga.

CHAINS

HIGH-GRADE SEAMLESS GOLD FILLED

TO THE RETAIL TRADE

GOODS GUARANTEED FOR A SPECIFIED TIME

DROP US A POSTAL, REQUESTING OUR
SALESMEN TO SHOW YOU THE LINE.
"WE DO THE REST."

CHAPIN & HOLLISTER CO.

PROVIDENCE, R. I.

Benjamin Franklin

said a useful trade is worth more to a young man than the inheritance of his father's estate in lands and stocks. That he

SPOKE TRULY

is apparent to the common sense of every one. Our business is to teach the pleasantest and best paying trades—trades which are exceptional in the fact that the demand for good workmen exceeds the supply. This is the reason the salaries paid are high.

Send us your address, and we will mail you our catalogue, etc., which will explain our methods of fitting students for the **high-salaried** positions.

THE EZRA F. BOWMAN TECHNICAL SCHOOL

LANCASTER, PA.

A school for the thorough teaching of
WATCHMAKING, ENGRAVING, etc.

Watch When
Sent to Us.
Wasn't it a Wreck?



We are
Specialists
in
Job Work
for
Jewelers

No watch is in too bad a condition to be made good as new by our expert workmen, unless it is practically destroyed. We solicit the most difficult work of this kind and will guarantee satisfaction.

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Fourth Floor
Masonic Temple, Chicago

Send for Catalogue and Price-List

Our Repair Work Department

is unrivaled in all America. In this branch of our business we have won the reputation of the country as "Specialists in job work for jewelers." We have been especially successful in

WATCH REPAIRS

and have given the highest satisfaction to customers who have sent us their work.

WATCH CASE AFTER RECONSTRUCTED BY US.

We made it look "as good as new," and didn't charge a big price for the job, either.



Providence and Attleboro

During the past few weeks the manufacturers of this section have been busy getting out their new spring samples. Many got their new lines off the first half of December, while others did not get the new line in shape until the latter part of the month. The buyers from the West and other sections arrived here about the middle of the month, making their headquarters at the Narraganset Hotel. The new restrictions put in force a year ago have been removed by the hotel management, much to the satisfaction of the manufacturers, who now enjoy their former freedom in going up to the buyers' rooms. Speaking generally, the new lines do not comprise any great number of new things, as the manufacturers have had but little time between finishing up their fall orders and getting out the new line. More than this, there is a growing tendency to concentrate their efforts on the new designs for the fall samples. As the spring season is shorter, the manufacturers have more time during the late spring and early summer months to do justice to their fall line. Despite this fact, getting out the new lines is quite a big job, as the entire line must be gone over, repolished, the undesirable patterns picked out and new ones added, and all to be done in a very short time, at this season of the year.

A Mutual Protection Association

In connection with the movement towards forming an association for the protection of supply men against fraudulent debtors, a meeting was held at the Crown Hotel, Providence, some weeks ago, at which much practical business was done. The attendance was large and representative, and a lively interest in the movement was manifested by all present. One of the principal actions taken by the meeting was the drafting of a constitution for the government of the association. The main provisions of the constitution are that each member is expected to furnish, upon request of the secretary, such information as may be asked for concerning the business methods and credit extended to the party in question, such information being strictly confidential and not to be refurnished to any one in a manner that would disclose the names of any of the parties furnishing it to the secretary. A formal admission fee is to be charged, together with an annual tax of \$25. The organization is to be governed by a president, vice-president, and a board of directors representing the various branches of the different industries embraced by its constitution. It is further provided that the secretary or any official whose duty it will be to pry into the affairs of the credit-seeking trader, shall be sworn to secrecy.

Against Reciprocity with France

An important non-political meeting was held at Attleboro, in the rooms of Company C Association, on December 6th, at which S. O. Bigney submitted a lengthy report of the proceedings at the Reciprocity Convention. After giving an outline of the attitude of the jewelry manufacturers in regard to the French reciprocity treaty, Mr. Bigney went on to say: "We are to blame if we do not look out for our business. Were it not for what we did before the Dingley tariff committee the duty on imported jewelry would be 45 per cent. instead of 60, and the reduction which would have been made by the French treaty without our protest would have reduced the protection to the 35 per cent. it was under the Wilson law. We have scored these two times, but we do not give the matter attention enough, even if it is our bread and butter. Europe

is watching for the smallest gap to enter with a flood of cheap and salable goods. Is it not business to cut all party considerations out and get together as business men and citizens to work for the industry in which we are interested? We certainly cannot expect to remain idle and at the same time remain prosperous. All other industries work for their interests and we must for ours. In giving an illustration of the evils which would be wrought by any interference with the existing state of things, he said: "There is a business house in North Attleboro which makes gold-plated wire. Then this is sent to Europe and made into chain at very low wage rates. The chain is brought back into New York and a 45 per cent. duty paid, and then it is sold in the American market at prices we cannot touch. I have an appeal now before the tariff officials regarding that, and I have the promise of aid from a leading Senator in fighting it." After Mr. Bigney had concluded, the subject was taken up by Mark E. Rowe, who advocated strenuous opposition when the question came before Congress.

The store of Arthur F. Brown, Main Street, Pawtucket, was the scene of an attempted burglary early on the morning of December 1st. The large plate-glass window in front was broken, but before the thieves had appropriated any considerable quantity of valuables their operations appear to have been interrupted. In a subsequent attempt to purloin the money at the ticket office of the Woodland railroad station some of the jewelry was dropped.

In connection with a sale which was held at the Brunswick Hotel, Boston, last month, for the purpose of founding an asylum for decrepit orphans, the jewelers of Attleboro contributed a liberal quantity of jewelry and silverware.

Horace A. Carpenter, of Horace F. Carpenter & Son, Providence, the well-known refining firm, has gone on an extended trip for recreation and the benefit of his health. He contemplates visiting St. Thomas, Jamaica, Porto Rico, the Bahamas, the Barbadoes and Cuba.

Wm. H. Luther, the well-known Providence jewelry manufacturer, was recently appointed a police commissioner, a position which carries with it a salary of \$3000 a year. Mr. Luther is a native of Dover, N. H., and has been associated with the jewelry business since his seventeenth year. He has had an extensive political career and became a license commissioner in 1889.

The partnership heretofore existing between Edward Hooper, W. H. and S. D. Mason, doing business as the Falls Mfg. Co., Attleboro Falls, has been dissolved owing to the withdrawal of Edward Hooper. The affairs of the firm have been assumed by the remaining members. As a token of the esteem in which Mr. Hooper was held by the employees, the latter presented him with a handsome easy chair. Mr. Hooper is now a partner in the firm of L. W. Tweed & Co., of Attleboro, in which a change has also been made through the withdrawal of Frank and William Moulton. The firm-name of L. W. Tweed & Co. has not been changed.

A fashionable local event took place recently when Charles Thomas Paye, of Simmons & Paye Mfg. Co., Providence, was united in marriage to Miss Lillian Gertrude Bigelow. THE KEYSTONE extends congratulations.

An unsatisfactory express service is one of the difficulties with which Attleboro manufacturers are wrestling just at present. The causes for complaint are alleged exorbitant charges between Attleboro and Providence, together with a serious impediment to dispatch in transportation by reason of the

failure of the express company to keep its office open late enough in the evening to accommodate the many shipments. As a result of the determined action of the jewelers, arrangements have been made by the New York, New Haven & Hartford Railroad Co., for a special express car to be side-tracked at Attleboro every afternoon and to remain open for packages up to 11 o'clock at night, when it is to be loaded and dispatched for Providence. Additions have been made to the express company's working force. The jewelers are to be congratulated on the outcome of their business-like action. It is to be hoped that the present satisfactory arrangements will be faithfully adhered to by the express company.

Daniel H. Robinson, a well-known North Attleboro jeweler, died last month at his residence in the village of Oldtown. He was head of the firm of D. H. Robinson & Co., but his indifferent health obliged him to retire from active business pursuits some three years ago.

Joseph J. Maguire has been admitted to the firm of C. E. & F. E. Sulloway, of Providence, and the firm will hereafter be known as C. E. Sulloway & Co.

Any step towards the bringing of education to a thoroughly practical standard will be welcomed by all who have the best interests of the country at heart. In this connection the timely action of Miss Marion N. Darling, a teacher of drawing in the public schools, is most praiseworthy. Miss Darling is interviewing the jewelry manufacturers of Attleboro, with the object of obtaining their views as to what elements in drawing are most calculated to be of practical utility to pupils when they engage in commercial pursuits. As a result of the interviews some radical changes will take place in the course of drawing instruction in the schools with which Miss Darling is connected.

William Kerr, the veteran watchmaker of 543 Westminster Street, Providence, one of the best-known horological workers in that section, recently celebrated the eighty-fourth anniversary of his birthday. The patriarchal horologist received numerous congratulations. He has been engaged sixty-eight of his eighty-four years in his present occupation, and was born in the village of Manton, North Providence, December 12, 1817. His successful inventions began in 1864, and include among a number of highly interesting models, a ball clock, dial clock as well as diamond tools and saws, and a model of the Strasburg Cathedral clock, and a machine for drilling watch jewels, with an opening the size of a human hair. Mr. Kerr still enjoys comparatively good health and is in constant attendance at his place of business in Providence.

One of the most important business transactions of recent date was the purchase of the plant and business of the G. A. Dean Co., of Attleboro, by Joseph M. Bates. W. A. Engley, head of the Dean Company, has retired from active business pursuit; N. Justin Smith and Henry B. Richardson, the other members of the firm, remain with the new owners. The business of the company will be removed from the location on Railroad Street, in which it has been carried on since 1858, to Mr. Bates' new jewelry factory on County Street, which is one of the most elaborately equipped plants of its kind in the country. Mr. Bates' business career has been noteworthy, and he is much esteemed for the indomitable energy he displayed in behalf of the jewelry and kindred industries of Attleboro after the havoc wrought by the fire of 1898.

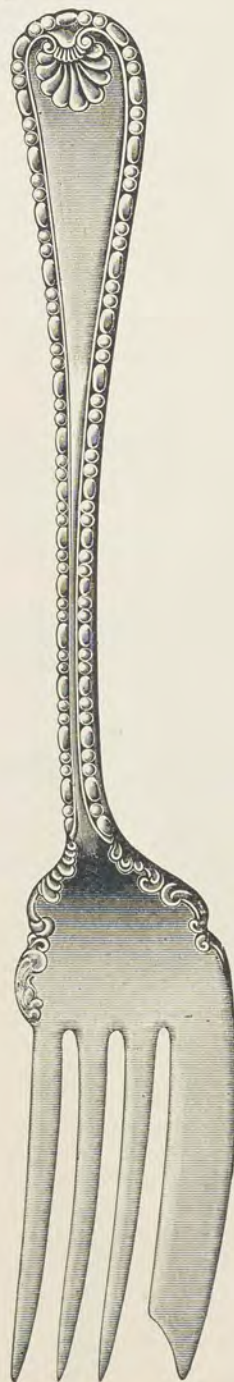
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Our goods the equal of any on the market and we guarantee them to strip as much silver as any "Rogers" brand manufactured



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Hartford, Conn.

FACTORIES

Hartford and
Wallingford, Conn.

Conditions in the Middle West

Conditions in the Middle West Perhaps no portion of the country shows such evidence of future prosperity and development as that generally called the "Middle West." To manufacturers who are seeking an expansion of their home market, and to those retailers who are seeking to better their conditions by a change of location, this portion of the country is deeply interesting. Congressional action at the present session will tend to improve the existing conditions in this territory, which is already important in the volume of business transacted. Reference is particularly made to legislation regarding the construction of the isthmian canal and of irrigation works in the West. The former will immensely increase the commercial operations of the Middle West; the latter will not only vastly promote the agricultural production, but enable an increase in mining operations, which will be of startling importance.

THE KEYSTONE correspondent, as was mentioned in the last issue, has toured the Western States for the sole purpose of investigating conditions which exist and which are likely to exist during the coming year. The following matter is based upon the investigations made:

Railroad Construction and Irrigation

Railroad construction during the past year has been enormous, not so much in extensions of existing lines as in betterment of facilities. Over five millions of dollars have been expended by the Union Pacific. The Burlington has extended its Wyoming line to Cody, and opened an agricultural territory which has no superior in the West. The Elkhorn is making vast improvements about Deadwood and Lead City, S. Dak., which portend not only extensive enlargements of ore shipments, but even more remarkable shipments of cattle from the Belle Fourche district to the northwards. The Oregon Short Line is actuated by the same spirit of advancement, and throughout its Western Wyoming division and its trans-Utah system is preparing for an immense increase in traffic, based on mining and oil settlements prospective for next spring.

Great undertakings have already been begun, notwithstanding the lateness of the season, in the way of irrigation in Nebraska, Colorado, Wyoming, Utah and Southern Montana. Two great smelters are being constructed, one at Rapid City, S. Dak., the other at Grand Encampment, Wyo. The Argentine smelter at Argentine, Kans., has been closed and product will now be treated at the Omaha smelter, which was formerly handled at that place.

Expansion in Wholesale Business

Wholesale business has received a boom from the establishment during the past few months of a large number of houses, new to the trade, at the two principal points of the trans-Missouri country, Omaha and Denver. Not less than twelve have entered Omaha, and nearly that number the Colorado metropolis. Aside from these are the establishment of distributing houses of large proportions by the implement manufacturers of the lake States, six of these being located at Omaha alone. The sequence has been a continuance of building construction not known since the "boom" days in 1884-1891. This construction does not stop at wholesale buildings, but the number of retail establishments and buildings for public uses which have gone up, or which are now under construction, has been greater than any previous year since the various booms created in the West.

The growth of population has been another

feature of interest. Great numbers of immigrants, not only of Hungarians, Russians, Poles, Swedes, Danes and Germans, but representative Eastern farmers have located on the ranges of Northwest Nebraska, Northern Colorado and North Central Wyoming, and the work of the immigration agents has been such that an influx of immigrants unequaled at any time in this new country's history, is promised for the early spring. These immigrants are mainly sent to lands which have been irrigated by private corporations which have purchased large tracts and constructed dams, reservoirs and canals, and thereby furnished the water, which is the only requisite to successful conduct of agriculture. Thus a new trade has been created, and one which will increase as the country in which settlements have been made prospers.

Extensive Use of Water Power

Another feature, which presages increased capacity for buying, is the startling change which is occurring in the methods of securing power, the consequent enlargement of manufacturing industries and increased employment. Among these changes, which consist of chaining the waters of the swiftly-running mountain streams, are the following: At Pocatello, Idaho, Brady's plant, carrying power twenty-nine miles; Salt Lake, Utah, plant, furnishing motive power for street railways and power for street lighting and the manufacturing industries of the city; the several power plants along the Canon canal at Florence, Colo.; power at Kemmerer, Wyo., which furnishes lighting for several of the nearby towns, and is expected to be used in the coal mines at Diamondville, Frontier and Kemmerer. In the prairie States are plants at Rock Springs, Wyo.; Grand Encampment, Wyo.; Guernsey, Wyo.; one projected at Iron Mountain, Wyo.; one in operation at Kearney, Nebr.; one at Neligh, Nebr.; another at Chadron and another at Norfolk, Nebr. But the greatest in importance is that for which a deal is now being closed at New York by Omaha capitalists, for a power canal at Fremont, which will furnish power for all purposes in the cities of Fremont, Omaha, South Omaha, Nebr., and Council Bluffs, Iowa, and which comprehends a consolidation of the electric railways, street lighting and water plants of the three last-named cities. This deal will require a capitalization of \$30,000,000.

For the coming year railroad construction now planned, and rapidly being put into execution, so far as surveys can advance them, is as follows, nothing but authentic undertakings being mentioned: The extension of the Chicago Great Western from Fort Dodge, Iowa, to Sioux City, Iowa, and another to Omaha; the construction of an extension of the Missouri, Kansas & Texas from Parsons, Kans., to Omaha; the extension of the Elkhorn line from Verdigris, Nebr. to a point in South Dakota still undisclosed; the extension of the Union Pacific from Laramie or Cheyenne to Grand Encampment, Wyo.; the extension of the Burlington from Cody, Wyo. to a point westward undisclosed; and ramifications of the Oregon Short Line to reach the new districts opened by settlements already made and now in prospect for next spring. One of these extensions is to the vicinity of Thunder Mountain, Idaho, where the greatest gold discoveries known to the world have been made and have not yet been generally announced. The last arrival for the winter from Thunder Mountain reached Pocatello, Idaho, as THE KEYSTONE correspondent was about to leave. The man is an agent of the Oregon Short Line, sent solely for the purpose of investigating conditions and reporting for the purpose of determining

railroad construction. One of the most notable rushes to gold fields ever witnessed is booked for this district in the spring. The agent made the journey homewards on showshoes at so early a date as November 16th, indicating that the season of mining will be short, but the production is expected to be a vast accumulation of gold.

Iron Mountain, Wyo., is also to be opened in the spring, and its product put to utilization, not only at the vast plant of the Colorado Fuel & Iron Company at Pueblo, Colo., but at the smelters at Denver, Grand Encampment and Omaha. The increased ore output will require an enormous increase in the rolling stock of the railroad companies, and to provide against the contingency experienced the past year, of Eastern shops being unable to fill orders, the Union Pacific is putting material on the ground to erect new shops at Omaha as soon as the frost is sufficiently out of the ground. Guernsey's capacity is being largely increased and already 200 cars of ore of Bessemer quality are being shipped out. The shipments are expected to reach at least 700 cars before the next summer season closes.

One cause, and probably the principal one, of the magnificent business which has been experienced by the trade during the holiday season just closed, is the high prices which the agriculturalists have obtained for their produce. Country banks are overflowing with money. An instance may be interesting. Former Mayor Klocke, of West Point, Nebr., was besought by the State treasurer of Nebraska to accept a deposit of State funds at his bank at West Point. The offer was declined, because the bank already had so much cash that it was burdensome and it would have lost money in paying the two per cent. interest required on State deposits, aside from the risk of carrying so much cash. The same condition applies to other banks of the State, and farmers who in 1894 were being rendered assistance because of the drouth, are now looking for safe investments for their surplus funds.

The Jewelry Business Prosperous

The conditions in Omaha are spoken of later on. In Denver one cannot but be impressed with the magnitude of the business done. The stores have been burnished in appearance and partake more largely of the Eastern style of "show." Crowds of reasonable proportions were steady, and clerks and tradesmen most regularly employed. In Cheyenne three jewelry stores reported an excellent business. In Utah, at Ogden and Salt Lake the principal business is being done, and at Salt Lake particularly the season now closed has been most profitable. The stores are upon an elegant scale, being more commodious and presenting more of stock than any stores between Denver and the Pacific Coast. At Pocatello matters are but beginning to boom. The construction of the power plant and of new repair shops for the Oregon Short Line, now in progress, have proven important in the acceleration of business. At Butte, Mont., lively times are apparent and in prospect for the coming year. At Kemmerer and Diamondville, Wyo., tradesmen dealing in jewelry are developing largely, because of the great increase in production of the coal mines at these points. Fossil, Wyo., bids fair to furnish an excellent center the coming year, although up to November 12th it consisted of three log houses. Flowing oil was struck there the day before THE KEYSTONE correspondent arrived, and before he left the next day a village of slab shanties was visible about the fossil hills surrounding the new town. An immense rush of oil-well diggers is expected there in the early spring, over

(Continued on page 51)

A Rare Opportunity for Buyers of Watch Materials

We have recently purchased, at bankrupt sale, the stock of Swiss watch materials formerly owned by Tell A. Beguelin, who for many years was known as a large dealer in these materials and as the only handler of high-grade complicated materials for certain other classes of watches. In consequence we have to-day the largest and most complete line of Swiss materials in the United States—our stock including: Swiss stem-winding wheels in Plain, Double, Bevel and Clutch.

Instead of having your stem-winding wheels and pinions made to order, send sample to us, with full particulars, and we can, no doubt, duplicate it from our immense stock, and at a substantial saving.

We have high-grade complicated materials for the following classes of watches—heretofore handled exclusively by Tell A. Beguelin: Timing and Repeating, Split Chronograph, Plain Chronograph, Minute Register, Horse Timer, Double Seconds and Sweep Seconds, Chronometer and Duplex.

We also have materials for these watches—all of which have heretofore been difficult to obtain: Plain, Wallingford, Victor, New Haven, Rockville, Agassiz, Longines, Jockey Club, Caesar, Belle Mere, Nassau, Congress, Bristol, Ohio, Charmiles, Girard, Hartford, Continental, Lady Racine, Centennial, Pioneer, etc., etc.

We will fill orders for any or all of these goods, and for Jewelers', Engravers', Watchmakers' and Opticians' supplies in general, accurately and promptly. Write to-day. We make a specialty of mail orders.

W. GREEN & CO., Successors to Green Bros. 6 Maiden Lane, New York City Manufacturers, Importers and Jobbers of Fine Grade Watch Materials, Tools, Optical Goods, Jewelers' and Engravers' Supplies.

A Happy New Year to One and All

Thanking you for past favors and hoping a continuance of the same, we will say that if you have not done business with us in the past, do so during 1902, as it will be money in your pocket as well as ours.

MEYER JEWELRY COMPANY

HURRY-UP JEWELERS FOR HURRY-UP PEOPLE
KANSAS CITY, MO.



L. J. Marks, Kansas City.
Mermod-Jaccard Jewelry Co., St. Louis, Mo.
Robbins & Co., Fostoria, Ohio.
Geo. Nichols, St. Louis, Mich.
The J. Bolland Jewelry Co., St. Louis, Mo.
Sands & Fellows, Cedar Rapids, Iowa.
Threadwell, Ft. Worth, Texas.
W. C. Ward, Winchester, Ky.
Waterhouse, Hamilton, Ohio.
Larue, Oskaloosa, Iowa.
Bailey Co., Ottumwa, Iowa.

Becker & Lathrop, Syracuse, N.Y.
W. H. Muller, Denison, Texas.
Pittsburg Jewelry Co., Pittsburg, Pa.
J. W. Howard, Hastings, Nebr.
Barnet Jewelry Co., St. Louis, Mo.
L. R. Shumway, Rockford, Ill.
F. M. Younglove, Alpena, Mich.
Alfred Bourgeois, Jackson, Miss.
E. L. McDowell, Arkansas City, Kans.
C. D. Couze, Waverly, Iowa.
S. Smith & Co., Virginia City, Nebr.
Chas. Taylor, Steubenville, Ohio.

Briggs & Dodd, 334 Dearborn Street, Room 1230, CHICAGO, ILL.

We have to our credit the greatest number of sales, the highest aggregate of goods sold, the largest sales of jewelry ever conducted and the highest percentage of profit on individual sales. Our auction sales are a record of triumphs.

REFERENCES:

Geo. W. Biggs & Co., Pittsburg, Pa.
A. M. Hill, New Orleans, La., 2 sales.
Pairpoint Mfg. Co., Chicago.
A. Stineau, Cincinnati, Ohio.
Jos. W. Field, Galveston, Tex., 2 sales.
Roth Importing Co., Denver, Colo.
Albert Feldenheimer, Portland, Oregon.
C. E. Buhre, Topeka, Kans.
H. J. Young, Joliet and Kankakee, Ill., 2 sales.
Sumner Bros. & Co., Cleveland, Ohio, 4 sales.
Geo. W. Myers, Meriden, Miss.
Geo. W. Kennedy, Des Moines, Iowa.
W. F. Main Co., Iowa City, Iowa.
S. H. Ives, Detroit, Mich.
R. E. Samson, Marion, Iowa.
Oscar Heinze, Quincy, Ill.
Lange Bros., Dubuque, Iowa.
Geo. Clark, Lorain, Ohio.
F. B. Lewis & Co., Cleveland, Ohio.
P. E. Kern, El Paso, Tex.
J. P. Stevens & Bro., Atlanta, Ga.
G. A. Schlechter, Reading, Pa.
Slides & Co., Owensboro, Ky.
C. D. Gardner, Manistee, Mich.
John B. Miller, Portland, Oregon.
A. Schwane, Beaumont, Texas.
J. M. Washburn, Celina, Ohio.
Cutting & Wilson, Winona, Minn.
W. H. Kelly, Carrollton, Mo.
W. E. Smith, Bellefontaine, Ohio.
L. Kaminski, St. Louis and Galveston.
T. G. Burkhardt, Jefferson City, Mo.
Fussy & Blair, Missoula, Montana.
Geo. W. Meyers, Chattanooga, Tenn.
M. Zimmerman, Jeffersonville, Ind.
C. W. Ernsting, Gallipolis, Ohio.
W. A. Kirkham, Leavenworth, Kans.
Ash & Dembinger, Tacoma, Washington.
Barnett & Nonnenmacher, Columbus, Ohio.
Lyon & Kelling, Danville, Ill.
M. Waunch, San Francisco, Cal.

Woodward, Smith & Randall,
Colorado Springs, Colo.
Wilbur, Lamphere & Co., Galesburg, Ill.
Harry Harrison, Sault Ste Marie, Mich.
Sands & Fellows, Cedar Rapids, Iowa.
Leonard Krower, New Orleans, La.
W. K. Lippit, Norwich, N. Y.
W. J. Kelly, Oshkosh, Wis.
Ritter & Ryan, Muncie, Ind.
Amos Plank, Pueblo, Colo.
M. Greer, Iowa City, Iowa.
J. Albert Schirmer, Saginaw, Mich.
C. Ettinger, Cleveland, Ohio.
Rushmer Jewelry Co., Pueblo, Colo.
Freeman Jewelry Co., Atlanta, Ga., 2 sales.
Morris Benjamin, Denver, Colo.
Wm. Beck, Sioux City, Iowa.
Strow Bros., Fort Dodge, Iowa.
Sipe & Sigler, Cleveland, Ohio, 5 sales.
King Moss & Co., San Francisco, Cal.
H. Simon, St. Paul, Minn.
Rodgers & Pottinger, Louisville, Ky.
Hanna & Eroe, New Castle, Pa.
D. H. McBride & Co., Akron, Ohio, 3 sales.
H. Koester & Co., Detroit, Mich., 2 sales.
H. Kline, Seattle, Washington.
J. L. Sievert, Springfield, Mo.
A. W. Ford, Freeport, Ill.
S. H. Dodge & Son, Ypsilanti, Mich.
C. F. Baldwin, St. Joseph, Mo.
David Goldberg, Helena, Montana.
Stewart & Prescott, Dallas, Texas.
Farmlee Bros. & Co., Los Angeles, Cal.
Clemens Hellebush, Cincinnati, Ohio.
P. H. Lachicotte & Co., Columbia, S. C.
Geo. Chantler, Manistique, Mich.
C. H. Schiller, Utica, N. Y.
W. H. McKnight, Sons & Co., Louisville, Ky.
Dealers in art furniture, rugs, carpets, etc.
More than 100 others, and the Jobbers from
Maine to California.

THE TRADE

will not fail to perceive the great benefit of obtaining the services of two EXPERIENCED men at the cost of one. The audience never gets tired; each has his own methods. There is a change of voice and manner; also in case of sickness, it is an invincible argument. We work in perfect harmony, and it makes a degree of success in sales never before known. We have proved it is the greatest combination of talent ever available. WANTED FOR SPOT CASH—\$50,000 worth of Diamonds, Watches, Jewelry, etc., either in small lots or stocks. We have unparalleled facilities for disposing of goods which enable us to pay good prices.

Omaha and Vicinity

Largest Holiday Trade

Holiday conditions among the retail jewelers at this writing are entirely satisfactory, and the jobbers say they have no cause for complaint. Christmas shopping began earlier than usual this year, and it was rather feared that this meant a reduced demand as the holiday season advanced; but, on the contrary, 1901 will pass into history as a record-breaker. December of 1900 was looked upon as marking a very high tide in the jewelry business, but this December easily surpassed all preceding ones. It is noticeable that diamonds have been selling better than ever before, and this is taken to mean that the people in this section are more generally prosperous than at any time in the past. The latest census statistics would seem to confirm this view, for they show that capital in Omaha and Nebraska has increased eighty-five per cent. in the last decade. The jewelers from out of town who have visited the jobbers here look upon the diamond as a sort of touchstone by which the prosperity of the people may be tested, and when the sales in this line are good they contend that there is an excess of capital that is spent for the luxuries rather than the necessities of life. Only one pronounced fad has developed. The sale of chatelaine bags of all descriptions has been exceedingly large—those made of silver finding the greatest favor.

Malicious Attack on a Jeweler

As the result of attacks made upon Albert Edholm, a prominent jeweler here, three indictments have been rendered against Garnet C. Porter, a newspaper correspondent of this city. These follow an indictment returned some months ago charging Porter with sending obscene matter through the mails. An altercation occurred between Edholm and Porter something over a year ago, resulting in an assault case in the police court against the latter, but nothing ever came of this proceeding. Shortly afterwards defamatory circulars aimed at Edholm were distributed about the city. After a lull of some months an article of a scurrilous nature, apparently from the same source and directed at Edholm, appeared in a South Omaha daily paper. The friends of the jeweler became incensed and succeeded in securing the indictment by the United States grand jury. A week ago an indictment on the charge of libel was returned by the special grand jury and this was followed by an indictment charging assault, and another the distribution of defamatory circulars on the street by means of messenger boys. Charges of conspiracy and perjury are also hanging over Porter in Harrison County, Iowa, growing out of an alleged fake train robbery, in which Porter figured as the running-mate of a railway detective. The Iowa authorities applied for requisition papers, but they were refused until such a time as the cases pending against him in the State and federal courts shall have been disposed of.

Following the theft of \$10,000 worth of diamonds from Alfred E. Lowenthal, a New York diamond importer and wholesaler, at Portland, Oregon, in November, Prue Johnson, a mulatto woman, was arrested here and brought to Portland in custody of an officer. Meantime, Mr. Lowenthal has been here and identified diamonds which he values at \$1500. He is now in Kansas City where he has also identified \$800 worth of gems which were found in the possession of Prue Johnson's sister. The robbery was rife with mystery. Mr. Lowenthal was staying at the Portland

Hotel. In his room was a trunk containing his entire stock of gems, which he carries with him on his travels. On the night of November 17th the jewels disappeared, having been stolen from his trunk by one who had secured a key to the room from the pocket of the hotel porter. No trace of the diamonds was found until the arrest of Prue Johnson in this city, who aroused the suspicions of a pawnbroker who gave her \$200 for a beautiful diamond brooch. The Johnson woman was found in a restaurant with a negro, Harry Woods, and both were arrested, although the police did not suspect Woods of any immediate connection with the robbery, inasmuch as he is not known to have been in Portland. The house in which Woods and Prue Johnson had been living was searched and the diamonds discovered. The arrest of two negroes in Portland resulted. As soon as Mr. Lowenthal heard of the diamonds recovered here he started at once for Omaha. He stated that not all of his diamonds had been stolen, the thief or thieves being unable to lay their hands on \$5000 worth of gems. A short time ago Prue Johnson was in Leavenworth, Kans., at the home of her mother, where she appeared at a swell colored ball in an array of diamonds that took away the breath of the other guests. She is a hardened criminal, who has made her home in Omaha for the last fifteen years, excepting five or six years in Kansas, where she served a term in the penitentiary. She is not the kind of a woman who can easily be frightened, and she clings to the story told at the time of her arrest that she found the diamonds on the streets of Portland.

A. Mandelberg, whose jewelry store at 1524 Farnam Street, has occupied the most central location in the city for eight years, is now disposing of his stock as rapidly as possible and announces that he will go into the wholesale jewelry business. Mr. Mandelberg frankly states that he does not care to take a poorer location and did not attempt to outbid the Milwaukee railway, which offered a higher price for the corner than Mr. Mandelberg has been paying, thus securing a lease for a term of years. He states that he expects to be entirely out of the retail business by February 1st.

Sol. Bergman, who has occupied quarters in the Board of Trade Building for a number of years, has decided to get into the wholesale district and will soon occupy the store recently vacated by Reichenberg-Smith Co., at 409 South Fifteenth Street. The latter company is now fully established in its handsome three-story building of buff brick at 1513 Harney street.

Friends of Sol. Levinson, a prominent jeweler of S. Dak., were startled about ten days ago to hear that he had been shot by Lee Winsberg, a young man who was associated in business with him for a short time. The ball penetrated the upper lobe of the left lung and is believed to have lodged in the muscles of his shoulder. Word has been received that he continues to improve and that the doctors have pronounced him practically out of danger. Winsberg is confined in the county jail, being unable to furnish the bond of \$5000 fixed by the magistrate. Winsberg, when arrested, admitted that he had done the shooting and expressed the hope that Levinson would die. He said that he had been persuaded to take up his residence in Deadwood upon business representations made to him by Levinson, which failed to materialize.

A. I. Agnew, resident manager of the Columbian Optical Company, is at present in Salt Lake City, having visited Denver on the way. During his absence, which has extended over a period of several weeks, E. Riggs, manager of the Kansas

City branch, has been spending a portion of his time in Omaha. This company has installed an automatic lens-edge grinding machine to keep pace with the increasing demand which has taxed their workmen to the utmost.

Mrs. Margaret Huteson, mother of J. C. Huteson, of the Huteson Optical Company, and T. J. Trafford Huteson, banker and broker, of London, England, died here early in December. Her daughter, who died about three months ago, was the first white child born in Nebraska. T. J. Trafford Huteson is the junior member of the firm.

J. K. Hannoy, who has represented J. C. Huteson on the road for the past two years, has resigned to accept a responsible position with Sischo & Beard, of St. Paul, Minn.

It is reported that Johnson & Wagner, of Keosauqua, Iowa, will discontinue business.

Bert. Fosberg has opened a jewelry store at Pattonsberg, Mo.

Fred. R. Ingalls, who has been a jeweler at Long Pine, Nebr., for eleven years, has made an assignment for the benefit of creditors. His liabilities have not been announced.

W. S. Heller, secretary and treasurer of the Shook Mfg. Co., spent several days in Chicago.

W. E. Loomis, of Fayette, Idaho, has removed to Athena, Oregon.

David Hattenbach, a jeweler, at Sioux City, Iowa, who is correspondent of the *Dramatic News*, commenced proceedings for \$5000 against A. B. Beall, manager of the grand opera house in that city and manager of the Minneapolis Baseball Team. He alleges that Beall refused to recognize a pass from the dramatic paper mentioned. The difficulty is alleged to have occurred when "Quo Vadis" was the attraction at the theater.

Conditions in the Middle West

(Continued from page 49)

eight thousand claims having been filed since early November. Several companies have already been capitalized sufficiently to insure operations in the district.

At Cripple Creek, Colo., at Georgetown and other points in the gold district of the State, operations are by no means restricted and will, from all appearances, be increased during the coming year.

With business thus assured, the character of articles which will receive the most favor, is an important subject. Jewelers all over the territory declare that the demand is for a better grade of goods than they have been receiving. The prosperity of the country enables purchases of greater cost and variety. The particular demand is for watches, and all dealers complain of not receiving their orders because of slowness of the Eastern factories in filling them. Diamonds are in demand, especially those of a richer quality than the West has been receiving. Cut glassware is much sought, but the varieties offered are exceedingly limited in number. Art wares are receiving more attention, if of good quality, but cheap imitations are still disgracing the shelves, because of the inability of Western dealers to purchase better qualities, solely because traveling men are not furnished with the higher grade goods.

A careful survey of the entire territory indicates that the business for the coming year will be phenomenally greater than during the past year, which, notwithstanding the alleged drouth that affected only Kansas, has averaged twenty-five per cent. more than 1900.

*A Good
Line to tie
to!*



PROVIDENCE, R.I.

Look for our tag



Our New Line

is now ready and embraces a great variety of
new styles and patterns.

The **J. G. F. CO.** chains are

Unequaled for Quality
Unexcelled for Finish
Unsurpassed in Design

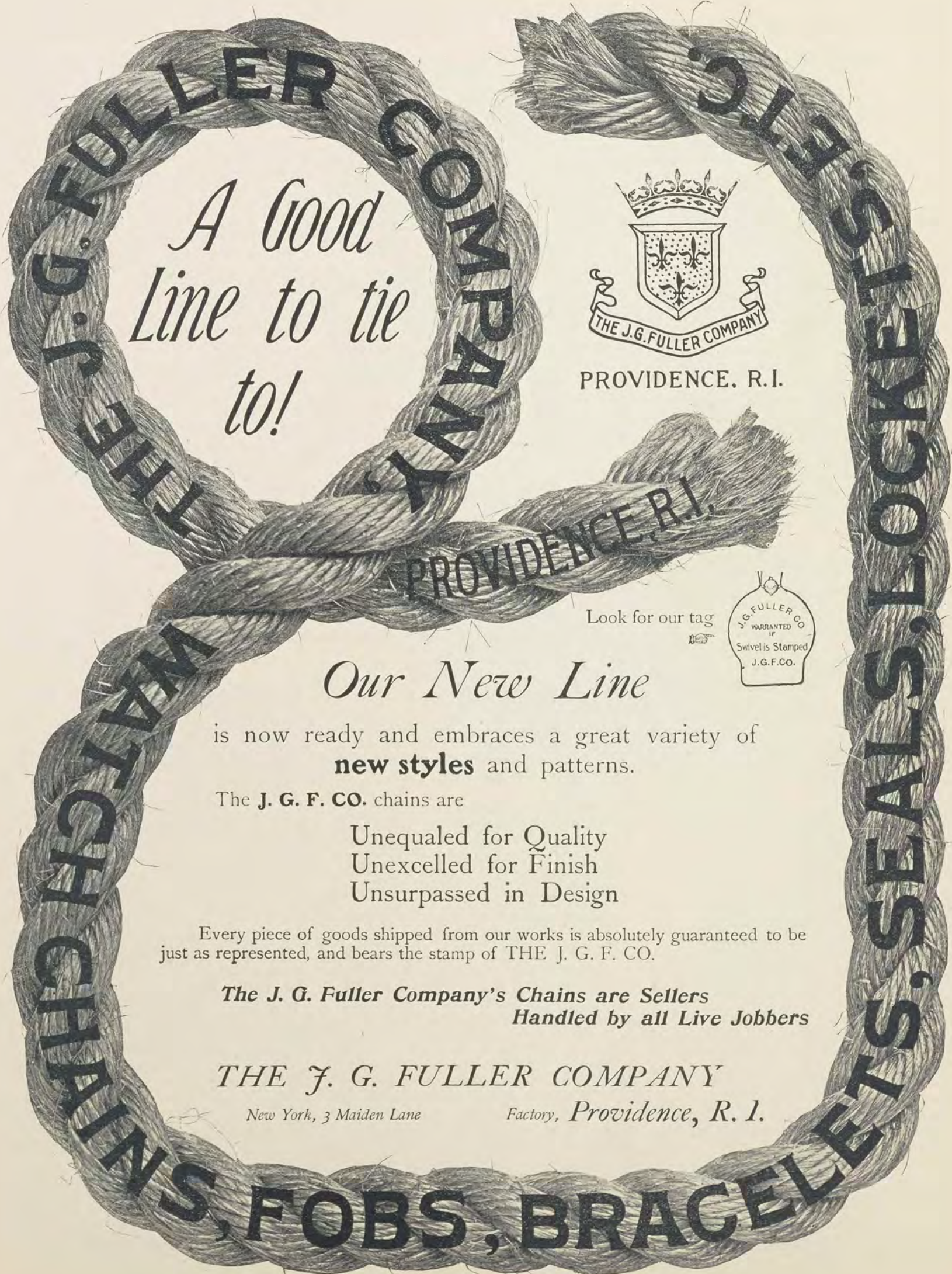
Every piece of goods shipped from our works is absolutely guaranteed to be
just as represented, and bears the stamp of THE J. G. F. CO.

*The J. G. Fuller Company's Chains are Sellers
Handled by all Live Jobbers*

THE J. G. FULLER COMPANY

New York, 3 Maiden Lane

Factory, Providence, R. I.



Dallas and the Lone Star State

At this writing there is the usual hurly burly in trade circles incident to the last few days before Christmas. Business transactions this year are more animated than for many seasons past, and in the opinion of most jewelers the great festival will be in every respect a bumper one for retailers. The prevailing conditions just now may be truthfully described as favorable in every sense of the word. Purchasing transactions are at high-water mark, and it is gratifying to record that an excellent store service is one of the most noticeable features of the busy season.

Dan. Meyer, formerly of Linz & Bro., has accepted a position with the Southwestern Telegraph and Telephone Co., as head man in the timing department.

B. Friedman, who has been in the employment of L. Friedman, of Dallas, has resigned his position, and has accepted one with M. A. Lesser, of Fort Worth, who has moved into a large new building and has put in a new set of fixtures.

Wm. Louwien, formerly in business at Bellville, Tex., has sold out and accepted a position as watchmaker with R. T. Crawford, of Temple.

T. E. Harwell, of Milford, was in Dallas looking over the new stocks and making selections of such articles as he thinks will add to the looks of his present stock.

W. T. Culpeper, of Hico, who has just opened a new store in that town, was in Dallas the first of December.

J. A. Medlock, of Lewisville, Tex., paid Dallas a visit, selecting such goods as he thought would help him out during the holiday trade.

Leslie Scaggs, formerly with the Dallas Optical Co., has resigned this position to accept one with C. G. Lord, of Fort Worth, who is engaged in the optical business in that city.

E. R. Smith, of E. R. Smith & Bro., of McGregor, was in Dallas on a purchasing tour to secure such goods as he thought would help him out in an auction which he held in McGregor.

Miss Flora Hunt, who has been serving her apprenticeship with Mr. De Lacy, of Dallas, has accepted a position with J. E. Mitchell, of Fort Worth, as engraver.

A. Weatherford, of Plano, was in Dallas buying goods to increase his stock for the holiday trade.

On the second of this month the firm of Robertson-Hill Co. gave a formal opening of their new store. It was well attended, owing to the general invitation which was extended by the company. During the evening souvenirs were given away to all the ladies and gentlemen. The souvenir was a large, beautiful white rose. The firm was assisted by F. M. Finch, of Chicago, who has accepted a position as manager of the retail department.

J. H. Watson, of Mineral Wells, has accepted a position with L. Lechenger, of Houston.

A. L. Bell has accepted a position as jeweler for the well-known firm of Bell Jewelry Co., of San Antonio, Tex.

L. Lechenger, of Houston, is out making his inspection tour over the H. & T. C. R. R.

Shuttles Bros. & Lewis have their full force at headquarters hustling to keep up with the orders.

H. H. Hawley, of the firm of Morgan & Hawley, has just returned from a trip in Southern and Eastern Texas, where he spent several weeks.

J. M. Chappell, of the Chappell Optical Co., has just returned home after spending several days out quail hunting in the district of Quanah, where he had great success and a lot of fun.

Fall openings seem to be a fad among the jewelers. The opening given by C. B. Pittman, of Ennis, was well attended and a grand success. Mr. Pittman has one of the neatest jewelry stores in the State.

A. B. Samuels, of Galveston, brother of Joe Samuels, of Dallas, has moved to Dallas and will remain with his brother as jeweler.

A. C. Wilson, of the Dallas Optical Co., has been on the sick list, but is now able to be out.

W. E. Shuttles has all his traveling men in off the road to assist the house force in keeping up with the holiday trade.

Fletcher Allen, of Kosse, was in Dallas looking after his interests and securing new goods.

On the night of December 2d, the building in which was located the drug and jewelry store of William Reese, of Comanche, Texas, was destroyed by fire. It was a total loss.

S. R. Neblett, of Sweetwater, Texas, made a general assignment, and his stock was sold for the benefit of his creditors.

J. M. Grogan, of Arlington, was in Dallas, securing new goods for his holiday stock.

A. L. Jones, of Llano, Texas, was in Dallas, securing the services of an auctioneer and new goods suitable to make the auction a success.

The new firm of Cook & Tesmire, who had only been located in Sweetwater a short time, was burned out on the 11th of December. They are not discouraged and have opened up anew.

Mrs. Archibald Hotchkiss died at her home, 178 North Ervay Street, in this city, December 5th. Her death was unexpected and a shock to her husband and friends. As Grace Langdeau she was a popular favorite in the social circles of Dallas, and was admired for her sweet, gentle ways and kindness of heart. As a young matron she retained her popularity and was held in high esteem by a very large circle of friends. Sixteen years ago she came to Dallas from Chillicothe, Mo., and she was only 23 when death called her away, leaving loved ones to mourn her early demise and their sad loss.

E. Burroughs, of Italy, had a very pretty fall opening of his store on the evening of the 10th, which was well attended by all classes, young and old. He has new fixtures and increased stock.

J. W. Smith, of Morrilton, Ark., has accepted a position with Johnson & Rather, of Huntsville, Texas, as their watchmaker.

C. A. Richard, of Norman, Okla. Ter., was in Dallas, buying up a large stock of goods to add to his old stock, so as to make his holiday trade swell his cash drawer.

A. T. Latta, of Houston, has accepted a position with Morgan & Hawley as watchmaker.

G. A. Pfaffle, of Greenville, was in Dallas, buying up some new goods to increase his stock for the Christmas trade.

The out-of-town visitors were more numerous than usual. Among them were: F. Allen, Kosse; R. Redwine, Henderson; W. T. Culpeper, Hico; Frank Miesch, Clarksville; J. F. Kennedy, Wolf City; G. W. Witherspoon, Trenton; C. M. Clark, Ennis; R. L. Caston, Fort Worth; H. L. Richards, Ferris; J. P. Bolding, Terrell; W. B. Dutton, Weatherford; G. C. Newton, Waxahachie; J. M. Robinson, Anna; B. B. Poore, Bridgeport; W. C. Hilburn, Jacksboro; G. A. Pfaffle, Greenville; Joe. Wilson, Greenville; A. H. Russell, Weatherford; L. E. Griffith, Jr., Terrell; W. S. Guthrie, Terrell; H. Iverson, Corsicana; Horace Gotcher, Farmersville; W. A. Peck, Denison; Gray Collins, Denison; Wesley Goodin, McKinney; H. W. Shrieber, Honey Grove; C. L. Joyce, Garland; A. E. Kujawski, Fort Worth.

Philadelphia Letter

An official statement issued by the Post Office Department at Washington shows that the receipts at the Philadelphia Post Office for November were \$369,282, against \$316,000 for the corresponding period of last year. This is an increase of \$53,282, or 16.8 per cent. An order was issued at the Post Office Department last month to establish substation No. 133, of the Philadelphia Post Office, at the corner of Tenth and York Streets, and substation No. 134, at Eleventh and Locust Streets, the order to take effect January 1st.

The case of the Commonwealth of Pennsylvania against the Bailey, Banks & Biddle Co. came before the Superior Court from Common Pleas Court No. 2 last month. The case involves a question as to whether a corporation expressly authorized to buy and sell, as well as manufacture, merchandise and pay its full corporation tax upon the whole amount of its capital stock based upon the value of its assets, and the amount of its sales, can be required to pay in addition thereto a mercantile tax under the act of May 2, 1899. The opposing counsels cited numerous authorities to support their contentions, and after an intricate argument the court held the matter under advisement.

Death of L. C. Gropengiesser

Louis C. Gropengiesser, a well-known watchmaker and jeweler, died at his home 235 Berkley Street, Wayne Junction, on Sunday, December 1st, after a three-weeks' illness. Deceased had been in failing health for a year, but was able to give personal attention to his business until three weeks prior to his death. He was a native of London, England, where he was born sixty-two years ago, and at the age of twelve months was brought to Philadelphia by his parents. His father was for many years in the watch and jewelry business at Third and Walnut Streets, and it was with him that the son learned the trade of watchmaker and jeweler. After two years spent in Europe Mr. Gropengiesser engaged in business at 131 South Thirteenth Street. He subsequently moved to 123 South Thirteenth, where he remained some years. Quite recently his establishment was moved to Walnut Street, below Thirteenth. Mr. Gropengiesser had charge of many clocks in public institutions, banks, etc., and was recognized as an expert in his trade. He was a member of the Masonic fraternity and a member of the old Handel and Haydn Society.

A fire broke out in the building at Third and Locust Streets, a portion of which is occupied by Colton & Bremer, manufacturing jewelers, at 8.50 p. m., on Tuesday evening, December 3d. There were sixteen men at work in the building at the time, but they effected an exit in safety. The jewelry firm occupies the top story, in which the outbreak was discovered. The loss has been estimated at \$1500.

John L. Kane, of this city, having decided to enter the profession of optometry, is taking a six-months' course at the Philadelphia Optical College.

The death occurred last month of George H. Bechtel, who at one time was a silverware manufacturer at Seventh and Arch Streets.

The will of Stacy Opdyke, recently deceased, was admitted to probate last month and disposes of an estate valued at the extremely conservative figure of \$5600, but generally believed to be worth over \$40,000. His estate is apportioned between his widow and two sons, as is also the royalties from a patented improvement in eyeglasses.

Plan

We pay expressage on all shipments of Gold and Silver sent us, and should our offer not prove satisfactory we will return the consignment intact. Returns made on all consignments of Old Gold and Silver the same day as received; returns on Sweeps as promptly as is consistent with accurate results.

Prices Paid

Old Silver Fluctuating
Platinum 75 cts. per dwt.
Old Gold—
8 Karat, 32 cts. per dwt.
10 Karat, 40 cts. per dwt.
12 Karat, 48 cts. per dwt.
14 Karat, 56 cts. per dwt.
18 Karat, 72 cts. per dwt.
Plated Scraps,
20 to 35 cts. per oz.

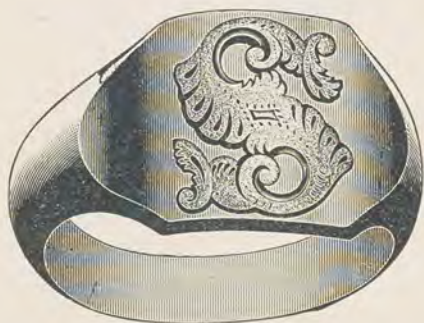
SWEEP SMELTERS
add **ASSAYERS**



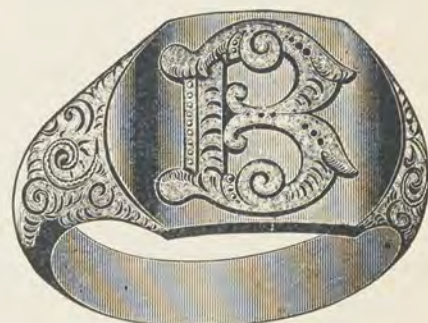
*In the
Scale of
Experience
Results Weigh
More than Prom-
ises. We Promise
Only What We
Can Do and
Do What
We Promise*

Cincinnati Gold AND Silver Refining Company

523 ELM ST. CINCINNATI, OHIO



We wish you all a Happy
and Prosperous New Year,
and wish to extend our thanks to
the trade in general for the liberal
support given our "CHIEF" ring.



If you have not already done so, let us send you a memo. sample.

Price for Bands, plain, - each \$2.50 net.

" " " chased, " 2.85 "

" " Plain Initials, " 1.50 "

" " Striped Red and
Green Gold " 1.75 "

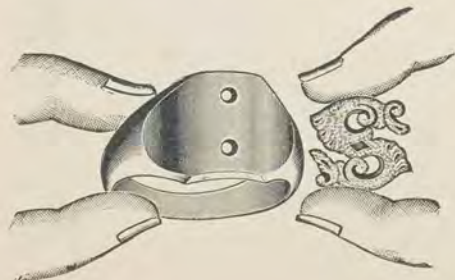
Initials Set with Rose Diamonds, 3.00 extra.

Slight advance caused by rise in prices of Diamonds.

The above are plump 10 K. 14 K. made to order.

Initials with Full Cut Diamonds made to order.

Emblems of any Order, with or without Diamonds, made to order.



Weiss Jewelry Mfg. Co.

Globe-Democrat Building

ST. LOUIS



Cincinnati Letter

Unprecedented Holiday Business

To ascertain the condition of business among the jewelers of Cincinnati, one need only walk along the principal streets, where jewelry stores are situated, and see the vast throngs of people passing in and out of the various stores with arms full of packages. The jewelry stores are to be congratulated on their holiday appearance, with the holly and mistletoe decorations both inside and outside. There is also noticed some beautiful and attractive windows. Diamonds are displayed in profusion, and there seems to be an unusual demand for them. People are giving much more valuable presents this year than ever before. There is a continual rush in all of the leading stores, and it keeps an extra force of salesmen busy complying with the wants of the different customers.

When jewelers are asked the condition of business, and if it is good, their answer is, "Of course, it is always good at this time of the year." In the wholesale district the traveling men are sending in good orders, and as a rule for a much higher grade of goods. It is also said that the people are buying much earlier than usual, which is a good indication for a prosperous year. The holiday trade, which is now practically over with the jobbers, was quite beyond expectation, and, as one expressed it, a "hummer." The various conventions held here during the past month have helped to swell the vast volume of business, as many had delayed their Christmas shopping for their visit to this city. Most of the jewelry stores are kept open at night during these busy weeks, which enables the working people to do their buying at night, which cannot be done during the day. This has been, indeed, a prosperous holiday season for the jewelers of Cincinnati, and is a vast improvement over the preceding year.

Important Legal Decision

The Circuit Court last month made a ruling, where rights of creditors were involved, that is important. After the assignment of J. W. Haley, the assignee paid some judgments against the assignor. Other creditors forced Haley into bankruptcy, and then it was found that his assets were not sufficient to pay his debts. Oscar Kughn was appointed trustee in that proceeding, and sued these creditors of Haley, who had been paid, to compel them to pay into the United States Court that which they had received, so it might be pro-rated among all creditors. The Court decided that that would have to be done.

Many Electric Roads

It is said within a year the greatest chain of electric railways in the United States will be those of Indiana and Ohio, preparations for building the connecting link now being made. The purchase of the Indianapolis & Greenfield electric line ten days ago by J. W. Chipman and his associates was the first step in this direction. This line, now but twenty-five miles in length, will be extended along the National road, east to Knightstown, and then to Cambridge City. The Richmond Street and Interurban Railway Company now has a line in operation from Richmond to Centerville, and the work of grading for the extension to Cambridge City has already begun. The two lines, one from the west and the other from the east, will meet there. In addition to this the local company will also build from Richmond to the Ohio State line, four miles east, where the road will be joined to the Eaton extension of the Dayton & Western Traction Company, thus com-

pleting the line between the two States. Branch lines are to be built from Cambridge City to Rushville and Connersville. Indianapolis is now in the center of the Union Traction Company system, as well as one or two minor lines, and with direct connection with Dayton and Cincinnati, and thus with the Ohio chain of roads, the Indiana system will be greatly strengthened.

A Cincinnati Building at Charleston

A meeting of the Charleston Exposition joint committee has been called to consider bids for the construction of the Cincinnati building and to award the contracts. According to estimates brought back by Cincinnati Commissioner Addison, the building will cost \$5500. Bradford L. Gilbert, architect-in-chief of the exposition, has offered to superintend the work personally and promises to have the building ready for occupation by January 1st. Treasurer Finch is making preparations to call in the subscriptions to the fund at once.

Cincinnati Day at the Exposition

Monday, January 27th, will be a red-letter day at the Charleston Inter-State and West Indian Exposition, at Charleston, S. C. This day has been set aside as Cincinnati Day for the exposition by the directors. The various business and commercial organizations of the city will take immediate steps towards sending a full delegation of manufacturers and merchants.

A. G. Schwab & Bro. reported a very good condition of trade. All of their traveling men were on the road and sent in good orders. They say that the tendency is for a much higher grade of goods and that the people are buying earlier than usual.

Mr. Plaut, of A & J. Plaut, reports a very good condition of trade and says prospects are bright for its continuation.

The Cincinnati delegation to the National Reciprocity Convention, which met at Washington, returned home the middle of December. The convention concluded to demand from the next Congress reciprocity treaties which will open the way for the expansion of America's foreign commerce and the creation of the office of secretary of commerce and industry in the President's cabinet, with a bureau of industry for the investigation of all proposed treaties or agreements with foreign countries having commercial features. Col. E. P. Wilson, secretary of the Merchants' and Manufacturers' Association, was appointed secretary of the convention.

William Pflueger, of Jos. Noterman & Co., wholesale jobbers and manufacturers of jewelry, reports a fine holiday trade in his territory, which is large and includes the leading cities in the South and West. He said this was the finest trip he has ever made, and that diamonds are in great demand and seem to be a leading article for Christmas presents among the wealthy. He said the country was never in a better condition and there have been as few failures as have ever been known among jewelers.

Your correspondent called on Clemens Oskamp and he as well as many others say, "There is no time for news, we are too busy." Taking such remarks into consideration, it signifies the vast volume of business being done in the Queen City.

Harry Marks has received word at his residence, 2104 Fulton Avenue, Walnut Hills, that his brother-in-law, Sol. Levison, well known here, has been shot and fatally wounded at Deadwood, S. Dak. Mr. Levison was shot by a business partner, Louis Wissberg. The former is a wholesale jeweler and had entered another business with Wissberg.

As his jewelry business had increased, he determined to sever interests with Wissberg, and the latter, according to Henry Marks statement, shot Levison through the right lung. Dispatches from Deadwood are to the effect that Mr. Levison is in a critical condition. He is the husband of Henry Mark's sister, formerly Miss Rebecca Marks.

Adolph Jordon, the optician, reports his business as good. He said the holiday trade was progressing satisfactorily.

The beautiful stock of holiday jewelry of Loring Andrews & Co. has been removed from their stock room and placed for inspection in their windows, where it is attracting considerable attention.

Cleveland and Northern Ohio

The chief item of news this month is that the volume of holiday business simply overwhelmed the jewelry trade, and other branches of business seemed to fare equally well. It was, beyond all comparison, the greatest holiday season on record in this city and section. Though diamonds cost considerably more this year than last, the sales were never so many nor so large in value. Mr. Hubbard, speaking for the Cowell & Hubbard Co., said: "The year and season exceed by a very large margin any previous year or season." Captain Burdick said: "The business is enormous in all lines."

The firm of Arnstein Bros. & Meir, whose business was reported last month as destroyed by fire, have resumed at 29 Euclid Avenue for their jobbing trade, and for their retail trade they secured the ground floor of the book firm of Helman-Taylor Co., 23-25 Euclid Avenue. Here the stock that was saved from the fire and such other new stock as the short time enabled them to get for the Christmas trade, were offered to the public.

A new jewelry firm has opened up for business the past month at 402 Superior Street, opposite the Hollenden. The firm-name is Wilsdorf & Schmidt. New capital has been enlisted and the concern starts out with every prospect of success.

The Webb C. Ball Co. are out with the announcement that they have been appointed agents for this country for the celebrated make of Jules Jurgensen watches.

Tom. McMillan, the well-known engraver, has entered the employ of the Cowell & Hubbard Co. For several years Tom. has been in business as trade engraver, but found it not too satisfactory.

The great revival of the pearl trade has stimulated some of our neighboring bucolics to turn from the pursuits of agriculture to that of pearl fishing. Several very good pearls were recently offered in this city that were found near Ashtabula, Ohio. The fresh water pearl has had a great sale this Christmas season and will probably be used during the coming year to a considerable extent.

A fire occurred in the store of Ed. Kline, 1412 Woodland Avenue, before the holidays. The clerks were engaged in completing the Christmas decorations, and when their work was finished one of them struck a match for the purpose of lighting the gas. The lighted match dropped in the midst of evergreens and in a few moments the entire show window was ablaze. A number of people, who were passing at the time, lent a hand at combating the flames. The damage caused by the fire has been estimated at \$700, which, however, includes a number of valuable rings, some of which, it is suspected, were appropriated by unsympathetic onlookers.



THE PROFIT YOU MAKE

by selling **SILVER CREAM** is not the only thing. A satisfied customer, who you know will come back to you for everything she needs in your line, is another result.

Your silver polish customers represent your best trade; they represent a trade that you cannot afford to take chances with.

It is essential, therefore, that you should have a polish which you can honestly recommend to them.

You are safe with **SILVER CREAM**; you are not safe with any other kind.

All up-to-date jobbers handle it.

J. A. Wright & Company

NEW YORK OFFICE, 3 Maiden Lane.

KEENE, N. H.



is but a moment, but let that moment mean something for you. If you intend to become a watchmaker **RESOLVE** that you will set about it in the best way. The one best way is to take a course in the

Waltham Horological School

which is the Oldest and has the Best Equipment and Instructors.

Thorough instruction given in

**HOROLOGY, ENGRAVING and
OPHTHALMOLOGY.**

Every pupil has the privilege of making a watch while here, and owning it when finished, without extra cost.

E. H. SWAIN, Proprietor,
WALTHAM, MASS.

Write for our New Prospectus.

A STORY WITH A MORAL.

Mr. Pumpnickel, our prosperous jeweler, while being entertained (?) by some highly flavored stories, told by a drummer, was pleasantly surprised by seeing Miss Hot Air, one of his competitor's best customers, enter his store. After exchanging the customary greetings, she requested to be shown his line of rings. She made a thorough examination of his prices and styles and expressed great surprise from her investigation, as she had heard that he sized and kept his rings in repair free of charge for two years after they were sold. Mr. Pumpnickel informed her that he bought his rings direct from the manufacturers, thus accounting for his low prices, and this firm sized and kept their rings in repair free of charge and also exchanged unsalable patterns for new styles. Miss Hot Air told him that she would give him her patronage from now on, but asked as a special favor the name of the firm he bought his rings of, as she had a brother in the jewelry business out West. He informed her that it was The Queen City Ring Mfg. Co., 31 Builders' Exchange, Buffalo, N. Y.

—From the Schnickelfritz, Ill., Daily News.

Detroit, Mich., Letter

The holiday trade is over and results are most satisfactory. Five days before Christmas the rush was tremendous. For a week previous the mercury had persistently kept near the zero mark and people waited for more comfortable weather in which to shop, but holiday buying could not be postponed indefinitely, and so despite the extreme cold, the business portion of Woodward Avenue was thronged night and day. Though the sudden rush had many unpleasant features, both for merchants and buyers, the crowds, as befitted the season, were goodnatured and waited patiently for a turn at the counters. And Christmas was so near that bargains could not be looked for to any great extent, and so all storekeepers sold goods at fair prices. And such an array as there was to choose from! Each store seemed prettier than the last, and all were equally busy.

Traub Bros., at 118 Woodward Avenue, and Traub Bros. & Co., at 205 Woodward Avenue, report unusually heavy sales in diamonds.

F. Rolshoven also says that diamonds were special favorites with their customers this season.

This year's debutantes seemingly fared well. R. J. F. Roehm & Son had a large and attractive assortment of the "new art jewelry," and it has been pretty well picked over. The "La Valliere" was an especially good seller. In the factory of Roehm & Son each man is a specialist in his own particular line. But each and every one's work is carefully inspected by Mr. Roehm before it is allowed to leave the factory.

The L. Black Company, the well-known establishment at 156 Woodward Avenue, had a most pleasing arrangement of holiday goods. This firm's camera department, where are found all the well-known makes, was a busy spot during the holiday rush.

An immense holiday trade but put the crowning touch to the most successful year in the history of the firm of Wright, Kay & Co.

Frank J. Roehm, 202 Bamlet Building, issued a most attractive pamphlet announcing his holiday goods and inviting inspection. The booklet was very neat and evidently produced the desired effect, for his store was well patronized during the gala season.

W. A. Sturgeon & Co. report an immense holiday business, their silver department carrying off the palm for sales. The mail-order department was also rushed, a large force being necessary to keep up with the inflowing orders.

The few weeks before Christmas witnessed no let up in the phenomenal activity which marked the wholesale trade of Detroit for the past three months. All precedents have been broken and a new high-water mark established.

R. C. Juterback, the jeweler at 644 Michigan Avenue, had an amusing time during his holiday rush explaining an error in his newspaper advertisement. The advertisement should have read, "Every purchaser will receive a scarf pin free," instead of "Any one presenting a copy of the advertisement will receive a scarf pin."

Charles Kutter, who for many years kept a jewelry store at 478 Gratiot Avenue, died at St. Joseph's Hospital, November 20th. He was seventy-two years old, and for the last few years led the life of a recluse, suffering from lack of food and proper care. He had no relatives nor friends. Charitable neighbors took him to the hospital, where he died.

Gustave E. Henning died at his residence in this city, November 20th. He was well known as

a German citizen. He was born near Dresden, Germany, fifty-six years ago and came to his country and this city in 1865. Being an expert watchmaker by trade he at once secured work with M. S. Smith & Co. for whom he worked many years. When Martin S. Smith retired from the firm, Mr. Henning started in business for himself at 348 Gratiot Avenue. Two years ago he removed his store to his residence. He leaves a widow and two children.

Mrs. Almeda Parsons Vann, wife of Isaac Vann, the well-known jeweler, and the niece of ex-Gov. Parsons, died here at the family residence, December 2d. Mrs. Vann, who was sixty-five years old, came originally from Corunna, Mich., where she married Isaac Vann forty-seven years ago. Mr. Vann has been a jeweler in Detroit for more than forty years.

C. P. Hall, a Saginaw jeweler, closes his business January 1st and will remove to Ingersoll, Ontario.

Elias Harris, a popular traveling jewelry salesman was initiated into Detroit Council No. 9, Commercial Travelers, last month.

San Francisco Letter

As the Pacific Slope is enjoying a bumper share of the national prosperity, an unprecedented holiday trade is confidently expected at this writing. The buying spirit is abroad in the land, and fortunately there is sufficient money to gratify it. Both retailers and wholesalers are enthusiastic, not only as to holiday trade, but as to prospects for the coming year.

M. Markheim, of Stockton, spent a few days in town during the grand opera season and incidentally selected a number of salable novelties for his Christmas trade.

C. E. Wyatt, of Winters, Cal., called upon the jobbers in San Francisco and gathered up a quantity of novelties to brighten up his stock for the holidays.

Peter Engel, the retail jeweler of Marysville, Cal., spent a few days visiting the wholesale houses. He reports business very good in his section of the country, as the fruit growers have had a very successful season.

L. Vogeli, of Jackson, Cal., visited the jobbing houses and selected a fine line of ready sellers for the holidays. His new store is one of the most attractive in the vicinity of Jackson.

Nelson & Veitt is the name of a new firm which has been opened at 62 San Pablo Avenue, Oakland, Cal. Both members of the firm come from St. Louis, Mo.

Jas. A. Sorensen Co., 103 Sixth Street, San Francisco, have just issued a very attractive vest-pocket fire-alarm book.

Arthur G. Prouty, with A. I. Hall & Son, is to cover all the territory formerly looked after by G. A. Brown, and we are sure he will be received as well by the trade in the surrounding country as he has by the retailers in San Francisco. Mr. Brown is to look after the inside workings of this enterprising house.

E. G. Capo, of Tucson, Arizona, spent a few days in town selecting suitable articles for the holidays and attending the grand opera, thereby combining business with pleasure.

Tabor Bros., retailers, on Market Street, San Francisco, have had a new pair of windows put in with fine new electric fixtures, making a very attractive front.

Geo. E. Butler, "the chronometer man," of 310 California Street, San Francisco, has just finished building a fine modern residence on the hill at Sansaleto, Cal., which commands a fine view of all the many interesting islands and points of San Francisco Bay.

W. G. Doane, of the Frank Golden Jewelry Co., Reno and Carson City, Nevada, was a visitor to San Francisco recently, selecting stocks for their two stores.

H. H. Weindieck, retail jeweler, of Red Bluff, spent a few days in town early in the month picking up bright, new, attractive novelties for his Christmas trade.

L. A. Schaefele, of Monterey, Cal., was a visitor in San Francisco and purchased a complete line of new and appropriate holiday goods for his Christmas trade.

C. H. Wright, the enterprising retailer, of Eureka, Cal., spent some time here selecting new stock for the holidays. Mr. Wright's new patent electric window-display stand is now on exhibition in his windows and is attracting considerable attention. J. C. Feige had the pleasure of Mr. Wright's company on the short ocean voyage between San Francisco and Eureka, and as they are two experienced sailors they were not troubled with *mal-de-mer*.

The Diamond Parlor Jewelry Co., of Market Street, San Francisco, have had an entire new set of fixtures installed in their store. The store was previously considered a very attractive one, but now it acts as a magnet. The walls are fronted with fine plate glass and the show cases are of very fine rosewood. A pretty electrical window display completes the attraction.

G. Beninghausen, the enterprising jeweler, of Seattle, Wash., has found it necessary to move into larger quarters. He is now located at 807 First Avenue, north. The store has been fitted up with new show cases and fixtures and presents a very attractive appearance. In the ten years in which Mr. Beninghausen occupied his old quarters he has built up a fine trade, and under the new conditions we are sure he will add to his already long list of friends.

S. P. Anderson, of Arcata, Cal., is now in his new location, with new show cases and fixtures. His electrical display was one of the sights of the town during the holidays. Mr. Anderson is an up-to-date retailer and knows the value of advertising. He edits a small weekly sheet setting forth the new things that he carries in stock, which is said to be quite a success.

R. H. Edwards, of Ferndale, Cal., has closed out his large line of photo. and kodak supplies, as his jewelry business is growing so large. He needed the space for new wall cases to accommodate his enlarged stock of jewelry.

W. A. Hurst, formerly with the Frank Golden Jewelry Co., of Reno and Carson City, Nevada, has accepted a position with G. Beninghausen, of Seattle, Wash.

Jeweler William Fassler, of East First Street, Los Angeles, had an unlucky experience on the night of December 12th. While he had been out to supper his store was entered by the back door, which the jeweler unfortunately forgot to secure. The place was stripped of all the watches left for repairs, a large number of watch chains and numerous articles of jewelry, together with a number of cheap clocks. The thieves carried on their work under the glare of a dozen lights and although they could be easily seen from the street they succeeded in committing one of the boldest robberies ever attempted in Los Angeles.

Columbia Disc Graphophone

Nothing has occurred, in years, in connection with the talking machine business, that has caused more of a sensation than the announcement that the Columbia Phonograph Company was to put a disc graphophone on the market. The fact has probably been lost sight of that when the graphophone was invented it was brought forward in two forms—as a disc machine on which the recording stylus makes a zig zag cut, and as a machine using cylinders on which the recording stylus makes a straight cut of varying depth. These machines each had their advantages and the question as to which was the better one to manufacture was left to the public for decision, with the result that the demand for the one using cylindrical records grew from a small beginning to enormous proportions, while there was practically no call for the disc type. Thus, for years, the model of the last-named instrument has awaited the possible coming of the day of its utilization. Graphophones using the cylindrical records have, in the meantime, been sold in all parts of the world, by the hundreds of thousands and the art of record making has been carried, year by year, to a higher point of excellence, until the Columbia record of to-day is among the perfected products of human ingenuity.

In the years that have been passing while the graphophone has been changing from a crude talking machine to the wonderful instrument that is now universally accepted as the best, if not the only satisfactory machine in use, other manufacturers, recognizing the impossibility of making

progress in competition with the graphophone and the world-renowned Columbia records, have brought out, under various names, imperfect disc machines and while their sale has been limited, sufficient interest in them, with the constant increase in the army of talking machine users, has finally been shown to warrant the Columbia Phonograph Company in supplying a first-class machine of the disc description. It is built on

more scientific lines than the disc machines of other makers and is superior to them in every respect. Instead of being a hybrid thing, it is a graphophone, with all the advantages of that well-known and highly-valued instrument, with its mechanism skillfully adapted to the use of indestructible disc records, similar to, though far better than those used by other disc machines.



Type AH

Price, **\$40**

The facilities of the Columbia Phonograph Company for manufacturing graphophones of every conceivable kind, as well as records of surpassing merit are so far in advance of those of their little rivals, that the mere announcement that they will now furnish a disc graphophone has brought them heavy advance orders from all points of the compass. With this entrance into a field in which small concerns have accomplished a little but not very much, the Columbia Phonograph Company takes possession of the entire business, having won its commanding position by deserving it and by right of having been the first in the field with every improvement that tended to advance the art.

Columbia Phonograph Company

World's Headquarters for Talking Machines and Supplies

NEW YORK, 93 Chambers Street
BOSTON, 164 Tremont Street
PITTSBURG, 615 Penn Avenue
BALTIMORE, 110 East Baltimore Street

WASHINGTON, 919 Pennsylvania Avenue
CHICAGO, 88 Wabash Avenue
SAN FRANCISCO, 125 Geary Street
MINNEAPOLIS, 306 Nicollet Avenue
ST. LOUIS, 720-722 Olive Street

PHILADELPHIA, 1032 Chestnut Street
BUFFALO, 645 Main Street
LONDON, 122 Oxford Street, W.
PARIS, 34 Boulevard des Italiens
BERLIN, 65-A Friedrichstrasse

St. Louis Letter

Business Conditions

The holiday business, among both the wholesale and retail branches of the jewelry and optical trades in St. Louis the past month, has been a record breaker. The latest reports from the retailers in the territory tributary to this market is to the effect that their Christmas business never was better. The severe cold snap the middle week of December, which was general throughout the West and Southwest, did not affect the rush materially and the people bought more liberally of the jewelers than ever, and the best grades of goods were none too good for the buying multitudes. The demand was not for any single article, but it was general, right through the stocks of the dealers. Diamonds and watches were in lively call, so were locket and brooches. Sterling flatware had a great sale, as did cut glass. It has been a great season for jewelry and there can be no doubt that the jewelers got their full share of the general prosperity that is abroad.

St. Louis More Prosperous Than Ever

The immense expansion of the business of St. Louis since the presidential election of 1896, can be seen from a comparison of the bank clearances for November, 1896, and November, 1901, the figures being those furnished in the national tables published each Saturday. In November, 1896, the figures were: November 6th, \$17,913,542; November 13th, \$24,752,110; November 20th, \$26,364,477; November 27th, \$21,008,286; a total for the month of \$90,038,415. The figures in November, 1901, were as follows: November 7th, \$45,655,335; November 14th, \$52,281,598; November 21st, \$54,464,674; November 28th, \$41,900,122; a total for the month of \$194,301,729. The gain over the month of November, 1896, is \$104,263,314, or 115 per cent. According to the national table of weekly bank clearances, printed for the three weeks previous to December 22d, St. Louis was far ahead of any other large city in its relative gain, and this highest proportionate position has been maintained for many consecutive weeks.

Great Gain in Postal Receipts

The great gain in the postal receipts of St. Louis for November, as compared with the same month in 1900, the total receipts being \$176,000 in that month last year and \$202,000 this year, is another of the evidences of the great business expansion which is under way in this city. Some of this increase in the city's activity is due to the approaching World's Fair, but much of it would have come in any event. The chances are that St. Louis is making greater gains in population now than it did at any previous time in the past twenty years.

Still Breaking Records

St. Louis continues to break all records in its bank clearances. For many weeks past she has led the list of the large cities in relative gain in bank clearances. The increase for the week ending December 21st over the corresponding week last year was 18.3 per cent. The gain in New York was 7 per cent. and in Chicago 8.9 per cent., while a loss occurred in Philadelphia of 2.8 per cent. and in Boston of 4.7 per cent. Business prospects in St. Louis for the new year are the most favorable ever known here, and this is true of manufacturing interests as well as general trade. In the general development of St. Louis' manufacturing and business resources, which has made the city one of the business leaders in the

business world, the great wholesale thoroughfare—Washington Avenue—is playing the star part. Fifty years ago Main Street contained all the wholesale houses in the city; to-day it is almost unknown to the great business world of St. Louis. The whole district now extends from Broadway west to Fourteenth Street, and still further westward the "star" of the business world will take its way with yearly sales reaching hundreds of millions of dollars.

St. Louis continues to roll up big figures in its bank clearances. For November they were 37 per cent. greater than the corresponding month of 1900. In fact, the clearings for the month just ended, \$210,910,308, broke all records for a month except that of May, 1901, which was slightly greater than November's total, or \$211,687,602. May had one business day more than did November. If the latter had been a thirty-one day month the May record would have been far exceeded.

The region southwest of St. Louis is growing faster than any other section of the country and the relative business expansion of St. Louis is greater than that of any other large city. Proof of this fact is found in the national table of bank clearances published every Saturday in the daily press.

The December *World's Fair Bulletin* speaks authoritatively when it says there will be no postponement of the St. Louis

There Will Be No Postponement

World's Fair. Its buildings will be ready for dedication, continues the *Bulletin*, as required by the act of Congress, not later than the thirtieth day of April, 1903. Its gates will be thrown open as specified in the act of Congress and announced in President McKinley's proclamation to all the world, "not later than the first day of May, 1903." Let there be no lagging in the preparation of exhibits on the theory that the exposition managers will not have everything in readiness for them in the date fixed by law. Such an excuse for tardiness has no basis but ignorance of the equipment of the Louisiana Purchase Exposition Company, and a mistaken estimate of the time required to prepare for a World's Fair of such gigantic scope and magnitude. People should remember that former world's fairs were training schools for the equipment of the St. Louis enterprise; that the men at work upon it are not undertaking a new and complicated and strange business; that they are men whose familiarity with the minutest details of preceding world's fair experiments has made them adepts. Moreover, it should be remembered that in the last ten years the business world has progressed wonderfully in methods of organization, in facilities and in ways and means generally. They had no electric motors, not even telephones to work with at the Philadelphia Centennial, and Chicago could now duplicate her Columbian Exposition in much less time than she required ten years ago. The Louisiana Purchase Exposition Company has at its disposal more money and more skilled specialists in all departments, and has the support of a stronger and more extended popular interest than were ever before enlisted in a world's fair.

Texas Greatly Interested

Governor Sayers' office is flooded with letters showing the widespread interest in the matter, and he will soon appoint thirty commissioners to canvass the State for subscriptions to the fund. It is expected that they will raise at least \$250,000

without difficulty, and the railroads have agreed to duplicate any amount thus raised. All the commercial bodies in the towns and cities throughout the State exhibit a lively interest in the movement.

As the Nebraska Legislature does not meet soon enough to provide money for the preparation of a State exhibit in time for the St. Louis World's Fair, Governor Savage says he proposes to appoint a commission of five to have charge of the funds, for which he will appeal to the patriotism and liberality of citizens, promising at the same time to ask the Legislature to reimburse those who advance the money.

Kansas at Our Fair

The State Superintendent of Public Schools in Kansas has announced that the State Teachers' Association will make all arrangements for a fine educational exhibit at the St. Louis World's Fair. The teachers propose to show the work done in all grades, and to have on exhibition pictures of the many fine school buildings in the State.

First Vice-President Corwin H. Spencer, of the World's Fair Company, recently returned from the East, states that Eastern manufacturers are taking great interest in the Louisiana Purchase Exposition, and will be better represented at it than at any former world's fair at home or abroad. Wherever he went he found, he says, the interest of the kind which will be backed up by action when the time comes.

The farmers of Missouri have deposited to their credit the largest surplus they ever owned. They never were in better shape to begin a new year than at present writing. This fact argues well for business during 1902.

C. L. Bates, for over thirty years past connected with the Mermod & Jaccard Jewelry Company, is now with F. W. Drosten, retail, as manager of the diamond department.

Our wholesale houses, generally speaking, will make few changes in their working forces for the coming year. We hear of nothing of note to record in this line.

At this writing, all the resident travelers are at home for the holidays. They report busy times among the country jewelers in spite of the zero weather for the ten days preceding Christmas. They also are of the opinion that the outlook is good for lively spring trade.

J. M. Terry, of Eldorado, Ark., was a visiting buyer here early in December, who bought liberally in holiday lines. Mr. Terry reports that they were anticipating a fine holiday trade in his section of the country.

J. H. Tetley, of Flat River, Mo., was in St. Louis during the early days of December, stocking up for the holiday trade.

The Weiss Jewelry Manufacturing Company inform us that their business during December was only limited by their capacity to turn out the goods. Their new initial ring "The Chief," proved a great seller and mighty popular with the retail trade.

Captain F. J. Klein, head of the well-known retail jewelry house of Klein & Fink, Fort Smith, Ark., was in St. Louis for a few days early in December, looking through the market for holiday lines. He expects a good Christmas trade.

T. S. Lopez & Son, of Ironton, Mo., were represented in this market the early part of last month by the junior member of the firm, who was buying liberally for their Christmas trade.

A. J. Blackstock, of Van Buren, Ark., was in St. Louis on a buying trip early in December, selecting goods for his holiday trade.

Kansas City and the Great Southwest

Voluminous Holiday Trade

The holiday sales, during the season just past, are said by many jewelers to be larger than ever. To the casual observer and the would-be purchaser it seemed that every one was desirous of buying, so crowded were the stores. The wholesale jewelry merchants were exceedingly busy, in spite of the fact that the November rush seemed sufficient to stock up all the jewelry stores in Missouri, Kansas and the territory. The working forces of nearly all the wholesale establishments were greatly augmented, while those of the retail stores were practically doubled.

The weather during the shopping season was most severe, but the enthusiastic ones braved the zero blasts and bought as never before. The style of goods demanded seems to have been better than usual. There seemed to be practically no sale for cheap stuff, in comparison with the augmented sales of a better line of goods. The department stores, as usual, offered plenty of goods of the cheaper grade; but the regular jewelers, both wholesale and retail, say that they never sold so much expensive jewelry and silver. In regard to silver, the demand for sterling trinkets and toilet articles has almost doubled, even though it was always large at this season.

The Kansas City, Kansas, police have recovered between \$600 and \$700 worth of jewelry stolen from Albert F. Lowenthal, a traveling salesman for a New York jewelry house, in the Portland Hotel, Portland, Ore., November 17th. The news of the finding of the jewelry was withheld for several days, as Chief of Police Zimmerman hoped to catch the thieves. The jewelry was found in the possession of Mrs. Millie Allen, a Kansas City, Kansas, negress, who is not supposed to have helped in the theft, but who, nevertheless, had received the stolen goods. Two other negroes were arrested in Omaha, and other pieces of jewelry were found. It is thought that the real thief can be easily traced from the start already made. Among the property recovered was a diamond sunburst with twenty-five stones, a harvest moon, and a fine opal and diamond ring. The thieves who robbed Lowenthal got \$15,000 worth of jewelry and diamonds. Lowenthal came to Omaha to assist in the search there.

Traveling men who are in for the holidays, say that the conditions in the surrounding country are most prosperous. The extremely cold weather will, however, make the cattle suffer severely, especially as the settling of the Kiowa and Comanche country has deprived them of what used to be excellent grazing land. All the indications are that it will be a hard winter for cattle men, but it is hoped that the uncommon cold will moderate.

The Cady & Olmstead Jewelry Company filed articles of incorporation last month, with a capital stock of \$100,000. The stockholders are as follows: Lucius S. Cady, 490 shares; Chauncey Olmstead, 490 shares; E. A. Hosier, 20 shares.

During the severe weather which has been the rule in Kansas City lately, the Christmas shoppers noticed that the show windows of the Underwood Jewelry Company were free from frost, while those of their neighbors were completely obscured. The device for keeping the windows clear was suggested by Fred. Chamberlin. An ordinary electric fan was all that was necessary to dispel any suggestion of frost. The window backing was kept open, so

that the warm air from the store could reach the outer panes, and the fan blew the warm air against the window, effectually dissolving all frost, and keeping the panes perfectly dry.

N. R. Fuller and E. L. Dondalson, traveling men for the Edwards & Sloane Company, were in for the holidays.

The little store of J. R. Mercer was so full of extra salespeople during the holiday rush, that purchasers fairly had to stand in line to get in. Mr. Mercer says that he has disposed of practically all the bronze novelties and bric-a-brac which he brought with him from abroad. This certainly is an indication of prosperity, for such articles are remarkably expensive, and are not usually counted on for ready sale.

The store of Gurney & Ware is almost twice its original size and much prettier as a result of the remodeling which was completed just before the holidays. It is now one of the most artistic stores in the city.

Dr. L. T. Brown, of Long Island, Kans., visited Kansas City shortly before Christmas.

C. W. Nelson, formerly of Odessa, Mo., has moved his stock to St. Joseph, Mo.

Fort Scott, Kans., is all excitement about a fire and robbery combined, which caused Jeweler Burkholder a loss of between \$1600 and \$2000. The fire broke out in some mysterious manner in the show window, where much fine jewelry was on display. When the fire department arrived the blaze was soon extinguished, but for a few minutes the store was in total darkness. In that short space of time many bystanders took the opportunity of snatching all the jewelry that they could lay their hands on, and Mr. Burkholder estimates his loss by theft as more than that by fire and water. The insurance on the stock will more than cover the loss.

Fred. C. Stiemann, whose suicide in Chicago, December 11th, was such a shock to his many friends, visited Kansas City just two days before this terrible act. Those who saw him during his last trip remarked that he seemed to be in unusually good spirits and nothing seemed further from his thought than suicide. Mr. Stiemann represented his own house, F. C. Stiemann & Co., dealers in tools and material, on the road.

W. F. Innes, of the Columbian Optical Co.'s Kansas City office, spent Christmas with his parents in Omaha.

Will. C. Schumann, the Norton-Paulson Company's traveling salesman, was married, December 11th, to Miss Genevieve Griffin, of Kansas City. The wedding was quite a surprise to Mr. Schumann's many friends. THE KEYSTONE offers congratulations.

E. Riggs, manager of the Columbian Optical Company's Kansas City office, visited his brother, W. G. Riggs, of the Omaha office, recently.

R. D. Littlefield, of Topeka, Kans., visited the wholesale and jobbing houses last week.

A. I. Agnew, manager of the Columbian Optical Company's Omaha office, spent Christmas in Denver with McLelen Parr, of the Denver office. Mr. Agnew will visit Salt Lake City before returning.

Miss Grace Berger, a niece of J. R. Mercer, was one of his busiest assistants during the holidays.

It is said that Dan. B. Cavanaugh, of the optical department of the George B. Peck store, is soon to become a Benedict. The rumor has not been verified.

H. V. Vining, the Walnut Street optician, has sold his store to W. F. Pool, of Omaha, who will continue business at the same stand. Mr. Vining is contemplating a manufacturing project, which will take most of his time.

Clem B. Altman, the Walnut Street jeweler, had a narrow escape from death a few weeks ago in an explosion of gas under the sidewalk before the store. The gas was escaping from a leak beneath the sidewalk and the basement became full of it, Mr. Altman was endeavoring to stop the leak when a terrific explosion took place, throwing him backward and stunning him for a while. He was not seriously injured, although his burns and bruises kept him confined to the house for some time. The stock was not damaged.

Harvey Ward, father of D. B. Ward, with Woodstock, Hoefer & Co., died here December 19th.

E. B. Doolittle, of Luverne, Minn., has sold out his stock and been succeeded by the firm of Berg & Putnam.

Enrico Moroto, with the Meyer Jewelry Company, is back at work after a severe illness.

D. M. Leach has opened a new store at Caney, Kans.

C. L. Porter has bought out the jewelry store of A. L. Butler at Cherryvale, Kans., and will continue in business there.

T. Thompson, with the Meyer Jewelry Company, slipped on an icy pavement about two weeks ago and injured his knee. He was laid up for some time, but is now back at work.

O. H. Gerry and A. O. Dickenson, traveling salesmen for the Merry Optical Co., are in for the holidays.

A. C. Dollinger, of the firm of Stuck & Dollinger, Richmond, Mo., visited the local wholesale houses recently.

George W. Bleeker, of Martin-Copeland's Chicago office, called on his Kansas City friends and customers just before Christmas.

F. O. Parker, of the Norton-Paulson Company's material department, spent a week of last month in Chicago.

T. S. Lidstone, of Dearborn, accompanied by his bride, was here shortly before Christmas, on a wedding trip.

John Gallidina, with the Meyer Jewelry Company, was the victim of a burglar recently. Several articles were stolen from Mr. Gallidina's house, among them a brand-new suit of clothes.

Dr. Fealty, of Abilene, Kans., was here purchasing goods just before Christmas.

Among the out-of-town visitors here lately were: R. C. Young, Waterville, Kans.; I. M. Scott, Garnett, Kans.; J. H. Kittredge, Chillicothe, Mo.; O. G. Morrison, Olathe, Kans.; Frank V. Burnhardt, Butler, Mo.; W. E. Crellin, Chillicothe, Mo.; C. A. Thomas, Norborne, Mo.; F. C. Fagercrans, Topeka, Kans.; S. J. Huey, Excelsior Springs, Mo.; George F. Powell, Mena, Ark.; J. H. Whiteside, Liberty, Mo.; O. E. Deworthera, Columbia, Mo.; George Young, Moberly, Mo.; W. T. Suppe, Galena, Kans.; J. O. Van Voorhees, Ossawatimie, Kans.; C. E. Warden, Topeka, Kans.; L. Megede, Richmond, Mo.; H. L. Zinn, Hutchinson, Kans.; J. H. Fuoss, Brookfield, Kans.; O. C. Atterberry, Harrisonville, Mo.; J. R. Jeffries, Elmdale, Kans.; G. H. Church, Oak Grove, Mo.; H. Van Mecker, Chanute, Kans.; Carl Humnius, Leavenworth, Kans.; F. R. Cullumber, Cowgill, Mo.; W. N. Kirkman, DeKalb, Mo.; S. N. Coffman, Braymer, Mo.; Dr. Rose, of Rose & Stivers, Leavenworth, Kans.; Mr. Roese, of Roese & Roberts, McCune, Kans.; Otto Burklund, Ossawatimie, Kans.; A. R. Rosenfield, Leavenworth, Kans.; Leslie White, Bonner Springs, Kans.; H. E. Conklin, Chanute, Kans.; V. G. Tiefenbach, Dodge City, Kans.; Carl Johnson, Pittsburg, Kans.; John Rupp, Atchison, Kans.

News from the Northwest

At this writing it is too early to make a definite report as to how the Christmas trade turned out, as the retail trade has its rush still before it, but if there is any way to judge what is coming by what has passed, we think we are not enlarging on the result by saying it was a hummer. The amount of business already done has been more than satisfactory. While it was not rushing, there was a steady call on all the dealers, and sales were made early. Particularly was this noticed in the higher class of goods. Jobbers report excellent trade, fully up to expectations. The one especial feature they report is more actual buying and not so many asking for goods "on memorandum." To be sure this evil has not been entirely eradicated, but it is pleasing to note its decline, and that retailers do not expect the jobbers to carry all of the risk, but are willing to assume part of it themselves.

Collections have been coming in a little better, but there is still room for improvement there. The new year should see more after that cash discount. It pays to get it.

Winter has set in in earnest in this section, and all are hoping for plenty of snow. The logging camps are all active and every one is at work that wants to at good pay.

S. R. Livergood, formerly with the Taylor Drug Co., has started in business for himself at Nora Springs, Iowa.

O. P. Yaeger, Riceville, Iowa, moved into his new store the middle of last month, just in time to get settled before the holiday rush.

C. H. Blanchain, Ossian, Iowa, was laid up a short time last month—only a bad cold, but he had to look out for something more serious.

The stock of the late J. P. Parott, West Union, Iowa, has been closed out at auction.

F. M. Doan, Elma, Iowa, who has been confined to the house for over two months, we are glad to say has recovered sufficiently to again appear at the store.

J. Meyer, Riceville, Iowa, expects to leave January 1st for a warmer climate for the benefit of his health.

Philleo & Nutting have bought the J. U. Potts stock, Oelwein, Iowa.

Albert Mellin, Jr., Stillwater, Minn., received his Christmas present rather early. He carried a full-fledged "Job's comforter" on his right cheek through the busiest part of the holiday rush. Albert says a little thing like that can never stop him.

Jno. A. Fredell, Center City, Minn., was summoned to Winona to attend the U. S. Court as a juror.

A. W. Voedisch, Aberdeen, S. Dak., had a narrow escape from fire loss December 14th. He was lighting a small gas heater in the fore part of his store when a sudden puff sent the flames to same cotton, etc., used in decorating his show window. The entire window display was destroyed, and the nicest goods being on display the loss was quite heavy, especially at this time.

J. S. Cohen & Co., wholesale jewelers' supplies, St. Paul, filed a petition in bankruptcy last month; liabilities over \$13,000; assets, stock and fixtures \$3500; accounts receivable \$3600; exempt \$3400. They have been in business about eighteen months.

E. B. Nelson, Worthington, Minn., has sold out to Birkebak & Buth.

Klienek Bros. have removed from Pierz, Minn., to Little Falls, where they succeed to the jewelry business of F. Shapera.

R. E. Langdon & Co. have begun business at Crandon, Wis. Mr. Langdon was for several years with J. Segerstrom, Rhinelander, Wis.

William Moore, Montgomery, Minn., has quit business there and is at present working for J. W. Wegman, St. Paul. He expects to start for himself as soon as a good location presents itself.

C. C. Staacke, optician, Duluth, Minn., has moved from 7 to 106 West Superior Street.

Lewis Bros. have moved from Eveleth, Minn., to Chisholm, Minn.

J. C. Herdliska, Princeton, Minn., has purchased a new store room, which he is remodeling, and when completed thinks he will be comfortably fixed for the rest of his days.

S. C. Hone, Barron, Wis., spent a few days at St. Paul last month, visiting his uncle, C. Wold, one of the pioneer Minnesota jewelers.

Guy A. Torley, the St. Paul jewelers' champion trick bicycle rider, performed his latest trick November 23d, by getting married to Miss Sibyl Hoyt. Guy's friends in the trade join in wishing him all kinds of good luck.

Fred. B. Stark, a former St. Paul watchmaker, is now with A. G. Tellner, Jamestown, N. Dak.

C. W. Wagner, Hutchinson, Minn., has completed a course in optics and engraving with S. B. Millard, Litchfield, Minn.

C. H. Nerbovig, Mapleton, Minn., was prevented from making his quarterly visit to Twin City jobbers last month by sickness in the family.

A. B. Evans, lately with L. Finkelstein, St. Paul, is now with Jeweler T. J. Thompson, Cameron, Wis.

E. E. Finch was helping out Bullard Bros., St. Paul, during the holiday trade.

Wm. F. Jost, Mankato, has moved to 314 South Front Street.

Geo. B. Johnston, Pipestone, Minn., reports his wife and child quarantined because of smallpox.

The store of John Pfister, St. Paul, had a narrow escape from fire last month—a lot of waste material in the basement catching fire, but it was discovered in time to prevent damage except from a little smoke.

Theo. G. Mahler, Le Sueur, Minn., accompanied by his wife, spent a few days amongst the jobbers early last month. T. G. believes in making his partner useful in selecting salable goods. He reports his new store all fixed up and attractive.

J. H. Woodstock, Clear Lake, Iowa, is rebuilding his store at the old stand.

Fred. Meyer, formerly at Marquette, Mich., is now with W. B. Lamberson, Nora Springs, Iowa.

The following visitors to Twin City jobbers were noticed last month: Wm. Moore, Montgomery, Minn.; Mr. Klienek, Little Falls, Minn.; C. H. Todd, New Richmond, Wis.; Chris. Arveson, Bird Island, Minn.; M. E. Brown, Graceville, Minn.; E. B. Nelson, Worthington, Minn.; S. C. Hone, Barron, Wis.; J. C. Herdliska, Princeton, Minn.; J. L. Moody, Ellsworth, Wis.; J. E. Smith, Fargo, N. Dak.; N. F. Stone, Cloquet, Minn.; Hudson H. Fullmer, Hope, N. Dak.; J. Gansl, Grand Forks, N. Dak.; L. E. Bryant, Belle Plaine, Minn.; L. F. Sears, Stillwater, Minn.; W. G. Gould, Glencoe, Minn.; A. F. Robertson, St. Cloud, Minn.; E. E. Church, Clear Lake, Wis.; Fred. Willman, Emil F. Huhner, Frank L. Grace and Albert Mellin, Jr., Stillwater, Minn.; F. Shapera, Little Falls, Minn.; L. J. Korstad, Zumbrota, Minn.; Frank T. Wilson, Mantorville, Minn.; S. B. Millard, Litchfield, Minn.; A. M. Harper, Renville, Minn.; R. D. Trowbridge, Moorhead, Minn.; Theo. G. Mahler, Le Sueur, Minn.; H. A. Muus, Kenyon, Minn.; L. B. Wheeler, Hancock, Minn.; Geo. Kehr, Lakeville, Minn.

Chas. L. Trout & Co.

GREETING

We wish you a Happy and Prosperous New Year.

Our 1902 lines will be ready January 10th, and will contain absolutely the

NEWEST PRODUCTIONS ONLY.

NEW IDEAS in the new and popular-priced

Baroque Pearl Brooches

Stick Pins

Cuff Links

Concealed Locket

Lorgnette, Neck and Vest Chains

Rings

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Etc.

If you want snappy, popular-priced, up-to-date articles, a one-cent postal card brings you a selection.

Our Spring importations of **EBONY** have arrived and are complete in all lines.

Send for our catalogue of Ebony, Silver Novelties and Bags.

Chas. L. Trout & Co.

5 & 7 Maiden Lane

New York, N. Y.

Railway Watch Inspection

The Inspection Rules and Regulations in force on the Canadian Pacific System

THE evolution of the railway watch inspection system to its present perfection is one of the important achievements in modern railroading. In the vast railroad system with which our country is blessed, and the immense travel that daily takes place over the marvelous continental network, absolute correctness of time is so vitally essential that watch inspection has become one of the most important branches in railroad management. The inspection system has greatly benefited the watch industry in that the exacting requirements call for a high grade of watch, and it has greatly benefited the trade in the sale and repair of these high-grade timepieces. It is easy to understand, therefore, the interest manifested by the jewelers generally in the watch inspection system, and we take pleasure in printing for their information and instruction the regulations governing inspection on the Canadian Pacific Railroad, which inspection is said to be very thorough and perfect in its working. For a copy of the regulations, as issued last month in amended form, we are indebted to R. J. E. Scott, the chief inspector of time service on the Canadian Pacific road. With this copy we received from Mr. Scott the following very interesting communication:

MONTREAL, December 10, 1901.

ED. KEYSTONE:—I am enclosing a copy of our watch inspection regulations, revised up to date of December 1, 1901. This is just fresh from the press, and contains all the amendments which several years' experience in railway time service matters have shown us was necessary to cover all points in connection with the inspection, repair, cleaning, comparison and regulation of railroad watches.

The Canadian Pacific Railway Co., and to be more exact, Thomas Tait, our manager of transportation, has made time service one of the special features of the many good things connected with the operating of this great railway system, and we have what I trust is a pardonable pride in our system of watch inspection, because it contains *minutiae* which I think will not be found embodied in the time service regulations of any other railway corporation. These regulations are practical and were framed from actual experience and not on theory, and therefore you will notice that the interests of the company, the men and the watch inspectors are all carefully guarded.

The real heart and soul of a safe and satisfactory service as regards time carried by railway employees, is contained in the regularity with which the men have watches compared and rated as required by the regulations. Our employees themselves take such interest in this, that we can state fully 90 per cent. of those who are required to carry standard watches submit them regularly for comparison and rating to the watch inspectors during the first and third weeks of each month, and oftener if possible.

You will note another of the important features of our watch inspection rules is that we oblige the watch to be cared for properly as to having it cleaned with regularity. We know it is a mechanical law that after a certain period the lubricating principles of the oil wear out, and we deduct therefrom that if the watch is not cleaned and freshly oiled within a certain limited time, the movement becomes unreliable, and therefore a certificate could not be issued calling for the declaration which we require inspectors to make as to the condition of the watch.

The watch trade generally owes much to railway watch inspection because the demands of modern railway time service have become so exacting that it has been the means of stimulating the watch manufacturing establishments to greater perfection in the adjustment of movements to the end of producing a watch that will measure up to a close standard of time keeping, under the severe tests received while being carried in railway service.

Furthermore, railway watch inspection has raised the standard of watchmakers (so to speak), because the watchmaker who now undertakes the cleaning and repairing of a standard railway watch is aware that it is subject to the closest scrutiny of the chief inspector, and its rating record will be so closely followed up that if the workman who did the job was careless or incapable it will very soon be discovered; and there is no body of men in existence who appreciate a reliable watchmaker more and who know better when a satisfactory job is done on their watch than do railway employees generally. If the watchmaker does not measure up to standard he may just about as well go out of business, so far as railway patronage is concerned.

The chief inspector of time service of the Canadian Pacific Railway Co. is an officer appointed for this service alone, and has no connection with any mercantile establishment, or outside issue, and has no "ax to grind," but is paid to devote his time to this office, which embodies not only the oversight of watch inspection, and comparison and rating of employees' watches from Atlantic to Pacific, but also the supervision and rating of all comparison clocks which are placed in dispatchers' offices, terminal and divisional points over a total mileage of about 11,000 miles.

The clocks are fine regulators, and our monthly comparative statements show remarkable results in close timekeeping, but as this is aside from watch inspection I presume you will not be interested.

I have always considered THE KEYSTONE as standard in watchmaking and jewelry journalism, and regret since being employed entirely by the C. P. R. that I have not had the privilege of seeing it often.

Yours truly,

R. J. E. SCOTT.

Watch Inspection Regulations

1. Train masters, road foremen of locomotives, locomotive foremen, roadmasters, bridge and building masters, conductors, engineers, firemen, train baggagemen, brakemen, yard masters and yard foremen must each carry a standard watch when on duty.

2. The minimum standard of excellence adopted by this company is a grade known among American movements as 17 jeweled, Breguet hairspring, patent regulator, adjusted to temperature, isochronism and at least three positions, and corresponding to Waltham "Appleton Tracy & Co." nickel, and "Riverside" nickel, 16 size; Ball "Official Standard" 16 and 18 size; Elgin "B. W. Raymond" nickel, Hampden "New Railway," Illinois "Bunn," Hamilton "936," and all grades equal or above, the variation of which must not exceed 30 seconds per week.

3. Employees required to carry standard watches must submit them for half-yearly inspection

within the months of January and July of each year, to the various watch inspectors.

4. Every employee required to carry a standard watch must, during the months of January and July of each year hereafter, take or send his watch to the inspector, who will, if his watch is satisfactory, issue a certificate (Form No. 94) and forward it to the employee's superior officer, and a copy of it to the chief inspector of time service. If the watch is below the standard it is to be rejected, and such superior officer promptly advised. Any watch so rejected must not be used in service nor passed upon by another inspector.

5. Employees working where no inspector is accessible will be visited by one, who will examine their watches and issue certificates.

6. In addition to the half-yearly inspection, the designated employees must submit their watches to the inspectors for comparison with standard time within the first and third weeks of each month hereafter, so that a record of the rating of their watches may be made.

This comparison and rating of watches with standard time is of great importance, and if it is not possible for employees to submit their watches for the purpose during the designated weeks, they must do so on the first opportunity thereafter. It is desirable that watches should be submitted for this purpose oftener than twice every month if employees are able to do so, and indeed as frequently as possible.

Immediately after the 14th and 28th days of each month, a report will be sent (Form 94B) to the superintendent giving the names of those who have neglected to submit watches for comparison and rating during the previous fortnight.

7. No charge will be made for the semi-monthly or more frequent comparison or for the half-yearly inspection of watches by the designated inspectors.

8. Cards for keeping the record of the rating of their watches will be furnished to employees by the inspectors, and, when on duty, must be carried on their person, subject to inspection on demand of their superior officers, or the chief inspector of time service; and a similar record must be kept by the inspectors, who shall forward them to the chief inspector of time service at the end of each half year (June and December).

Employees, or those by whom they may send their watches to be compared and rated, must see the inspector enter the rating in his record book *at the time, and must initial such entry in the column provided for the purpose*, in order to prevent errors by inspectors omitting to record the rating and thus erroneously reporting employees as delinquent.

9. Employees themselves must not set or regulate their watches, unless a watch stops owing to neglect to wind it. The non-observance of this rule will render the rating records of their watches valueless and defeat the object desired to be attained, namely, that of securing to every employee a watch regulated well within the limit of variation allowed by the company. Warning: Allowing watches to "run down" is injurious and changes their rating.

10. Watches must be cleaned at least once in fifteen months, but it is not advisable to postpone this to the limit, as inspectors cannot possibly provide standard loaning watches for all at one time.

11. When watches need cleaning or repairing they may be left with the inspector, or if the owner desires, may be taken to such watchmaker as the owner may select, but the watch carried in the meantime, before being used in service, must be submitted to the inspector for examination, who will, if satisfactory, issue a certificate (Form No. 94) and mark across it, "loaned watch," and forward such certificate at once to the chief inspector of time service.

When a watch is repaired or cleaned by other than an inspector, it must afterwards and before being used in service be submitted to the inspector for examination and approval.

An employee having his watch cleaned by other than an inspector must get from him a statement in writing as to the cleaning of the watch and the date thereof, because when the watch is presented for half-yearly inspection the inspector cannot issue certificate without proof of the cleaning.

12. When a watch is left with the inspectors of the company to be cleaned or repaired, a standard watch will be loaned to the employee free of charge, until his own is returned to him, but the

Railway Watch Inspection

loaning watch must not be kept out longer than fifteen days without the permission of the inspector.

13. Inspectors will supply a watch movement of the minimum standard of excellence for use on this railway, put up in a case of such metal as the employee may wish, with the price, if desired, payable in monthly payments as may be agreed upon—not, however, exceeding four in number—the amount of such payments to the inspectors to be deducted from the pay roll, if desired. It is not obligatory on employees to purchase standard watches from the inspectors, but all watch movements must be up to the company's standard, as per rule 2.

14. Superintendents will send lists (Form 94 A) of employees who are required to carry standard watches to the inspectors before the commencement of each half-yearly inspection (that is, the last week of June and December of each year) and inspectors will thereupon check off the watches as presented for inspection, returning all lists to the superintendent at the end of the inspection months (January and July).

Superintendents will advise inspectors at least once each month of the names of men to be struck off or added to their respective lists, in order that such lists may be kept up to date, and the fortnightly comparison and rating of no watches be overlooked.

15. Superintendents will see that all certificates of the half-yearly inspection of watches are filed with them, by the end of the months of January and July in each year.

16. All employees of the Operating Department who, under these instructions, are not required to carry a standard watch must, if opportunity offers, compare their watches daily with standard time.

17. Roadmasters and bridge-building masters must compare their watches with the watches of their foremen whenever opportunity offers.

18. The purpose and aim of this system of watch inspection being to ensure efficiency and safety in train service, and afford greater security to life and property, the hearty co-operation of employees in making the operation of the system successful is earnestly enjoined.

19. It is hoped that officers and employees, other than those who by these instructions are required to carry standard watches, will, as opportunity offers, furnish themselves with such watches.

THOS. TAIT,
Manager of Transportation.

Instructions to Watch Inspectors

1. Referring to circular issued by the manager of transportation relative to this company's watch inspection system, inspectors will note that the standard adopted for its employees' watches is one that is equal to what is known among American stem-wind watches as 17 jeweled, patent regulator, Breguet hairspring, adjusted to temperature, isochronism and at least three positions. The following are the lowest grades of movements, not already in service, which will hereafter be accepted: American Waltham Watch Co., "Appleton Tracy & Co." nickel, and "Riverside," nickel 16 size; Ball "Official Standard," 16 and 18 sizes, Elgin National Watch Co., "B. W. Raymond" nickel, Hampden "New Railway," Illinois "Bunn," Hamilton "No. 936," and all grades equal or above.

2. This standard is considered as low as would be safe and reliable for railway service, and must be adhered to in all new watches going into service. It should be explained to the employees that it will be much better, both for themselves and the service, if they will use only the best grades of American movements, and the finer Swiss watches, as the best is none too good for railway service.

3. Old watches which were in service prior to the reorganization of the time service on October 1, 1899, may remain in use, subject to the action of the chief inspector of time service, as based on the record of their performance or on actual test made in his office, if doubt of their reliability arises.

4. In no case in future must a movement be accepted as standard unless there is engraved on it

the name of the maker and the name or number of the grade, so that both inspectors and employees may be able to determine if a movement is of the required standard.

5. Be very careful not to impose any hardship or annoyance on employees, and, in case of doubt, give the employee the benefit, if it can be done with safety to the service, but always bear in mind that safety and reliability must be considered first. Refer doubtful matters to the chief inspector of time service.

6. All watches must be cleaned at least once in fifteen months, and when the fact of such cleaning is not within the knowledge of the inspector, he may demand proof thereof.

7. In the inspection of all watches the following points are important, especially in railway service:

a. Examine the watch with great care.

b. The movement must be clean and the oil fresh; frequently fine watches, after being put in order and regulated, will begin to change their rate, more or less, in from four to six months, caused by chemical changes taking place in the oil, and its wearing off or "gumming" up. This will be remedied by retouching the escapement with fresh oil, which will enable the watch to hold its even rating to the end of the year, when it should be cleaned and freshly oiled.

c. Be careful that none of the pivots are running dry, especially the balance and center wheel pivots, which in new watches require close attention, as this running dry has been the cause of frequent stopping and irregular rating.

d. The hairspring is a very important item. It must be true, not warped or bent, and it must be centered. The regulator pins should be straight, so that the hairspring will strike flat and equal. The pins must not be too tight or too loose, but should be just close enough to allow a slight vibration of the hairspring between them. This vibration should allow a clear space to be seen (by the aid of the glass) between the hairspring and pin, and the vibration must be equal between the two pins. The balance should be so adjusted that the regulator will stand as near the center of the index as practical.

e. The balance should be true and perfectly poised. This should have constant attention, as the severe usage of railway service may jar the balance out of poise, or spring the pivots slightly, especially the heavy balances.

f. The mainspring should be taken out every time the watch is cleaned, and tested to see if it fits the barrel properly, and if its movement is perfectly true and free and its strength fully developed to the end that the motion of the balance will not "fall off" during the last half of the day. The mainspring must be free from gummy oil or rust spots, and slightly fresh oiled. If found lacking in any of the points mentioned, it must be replaced by a good one, as the finest watch made will not keep correct time having a poor mainspring.

g. The stem-wind should be free and easily worked, not binding or grinding at any point. The pendant set should have special attention. If the stem pulls out too easily, the sleeve should be exchanged for a stiffer one. Caution the owner to be careful not to pull outward on the pendant while winding.

h. Every watch should be carefully tested for magnetism. The case should receive careful attention as to its condition, all joints to be in such condition as to exclude dust or moisture. Open-face is strongly recommended.

8. The rating records should be carefully watched and considered, and if in any case the rate is unsatisfactory, the owner should be questioned to ascertain the cause. If the limit of 30 seconds per week is exceeded after regulation, the movement should be examined and corrected, or condemned.

9. Inspectors are required to loan standard watches to employees for a period not exceeding 15 days, in exchange for watches left with them for cleaning or repairing. These watches should receive the same careful attention as to rate and condition as is accorded the watches of employees.

10. Inspectors must have a thoroughly accurate seconds pendulum clock, and must ascertain the error thereof to the nearest second at least once each day by comparison with the standard time sent over the company's wires.

11. Inspectors must see that the rate card is correctly filled in, in the presence of the employee,

and he must always be required to initial the corresponding entry in the inspector's rating book. Watches should be set to correct time when the error exceeds 30 seconds. This matter of comparison and rating records is of special importance.

Inspectors will send fortnightly report (Form 94B) to the superintendent and the chief inspector of time service promptly after the 14th and 28th days of each month.

If all employees have observed Rule 6, as required by the regulations, send in a blank form with the word "None" written across the face thereof, after dates named above.

12. Inspectors are enjoined to employ in their service none but thoroughly competent watchmakers; also to be careful and accurate in making out and filling in details on certificate Form No. 94 for the half-yearly inspection in January and July of each year.

Inspectors must make official examination of employees' watches promptly on the first date they are presented for fortnightly rating during the months of January and July, and issue certificates and forward at once as instructed in Clause 4 of the regulations.

Certificates which expire on different dates between one half-yearly inspection and the next on account of watches requiring cleaning, will be extended by the superintendent and the chief inspector of time service, on being advised by inspectors that watches have been cleaned as per Form 94B.

13. When the inspectors are to be paid for watches sold to employees through the pay roll, it is expressly stated that the payments shall not exceed four in number, and that the inspector shall have four orders signed (Form No. 1945), one for each month, naming the months. Such orders must be sent to the general superintendent's accountant.

14. In issuing this circular I would just add, make a friend of the employee; be courteous; win his confidence by fair and square dealing—it will pay you financially. Bear with him, though sometimes he may appear to be unreasonable. Generally speaking, if he complains he has a cause; try and remedy it. Mutual forbearance all round will give what we aim at, viz., the successful operation of the best railway time inspection system in existence.

R. J. E. SCOTT,
Chief Inspector of Time Service.

Missed His Birthday

Several traveling men were swapping experiences recently, when the subject of time was broached. "I came up from the Hot Springs of Virginia on Sunday," said one. "The train left there at six o'clock in the morning. I wasn't called until six, but I dressed, ate my breakfast and caught the train." "The train was late," suggested some one. "Not at all," replied the first man. "The train was exactly on time. You see, the hotel was run on Eastern time and the railroad on Central time, and there is just an hour's difference. The railroad doesn't change its time until Clifton Forge is reached." "I think I can beat that," remarked another one of the group. "I figure that I am forty-nine years old, and yet I have only had forty-eight birthdays. I lost a birthday three years ago while going from San Francisco to Japan. November 23d is my birthday. Well, on the night of November 22d, I turned in, and when I awoke the next morning I learned that it was November 24th. It is necessary to drop a day, you know, in order to conform to schedule time."

"We cannot get along without *The Keystone*, as we need it as much as we do our tools on the bench. Some single copies are worth the price of a whole year's subscription. So we enclose herewith one dollar for renewal."—Lowe Bros., Jewelers, Port Byron, N. Y.

Among the Trade

The trade are invited to send us reliable items of news for this department

California

Adolph Dobrowsky, one of the best known and most highly respected business pioneers of Shasta County, died recently at his home, East and Yuba Streets, Redding. The cause of his death is said to have been due to heart trouble, accelerated by pneumonia. He was born near Prague, Austria, on December 4, 1831, and learned the trade of his father, that of watchmaking, under his uncle, in Prague, and in 1849 came to New York. In the spring of 1851 he joined the rush to Salmon River, in Siskiyou County, and spent the historic winter of 1851-52 in that camp, with rations worth their weight in gold. About this time a peculiar incident occurred. Mr. Dobrowsky was kind to an Indian chief, who, in return, warned him that the miners were to be massacred by the Eureka Indians, whom they had wronged. Mr. Dobrowsky and his partner gave the warning, were laughed at and left the camp. The Indians came and slaughtered every man who remained there but one. Mr. Dobrowsky afterwards returned to Sacramento, and subsequently to Redding, where he purchased a jewelry store and carried on a successful business up to the time of his demise.

Jeweler M. W. Jenks, of San Diego, issued for the holiday season a concise little booklet, in which he led off with a handsome cut of the interior of his store. The neat little volume was bound in a cover of dark green, which bore the title "Gift Hints," in letters of gold. A preface announced what the booklet was intended to accomplish and the next page is made up of the signification of birthstones and wedding anniversaries. The reading matter proper covered seven pages and was divided under ten separate headings. Mr. Jenks talks his business pretty well, and is fortunate in having the services of a good printer.

Colorado

Charles H. Wyman, 10 East Pike's Peak Avenue, Colorado Springs, has been presented by his father, H. W. Wyman, of that city, with a \$10,000 stock of jewelry goods. Mr. Wyman, senior, has been in the jewelry business at 10 S. Tejon Street, for thirty years. His son, Charles H. Wyman, now conducts a store on his own account.

Illinois

"Campbell's Christmas Greeting" is the title of an eight-page booklet, issued by J. J. Campbell, the Bushnell jeweler. Mr. Campbell uses some forcible arguments in favor of his business methods and manifests a self confidence which must favorably impress the public.

Iowa

J. R. McCrary, of Farnhamville, was married a short time ago to Miss Nora Gray. The ceremony was performed in the Congregational Church, Farnhamville, and was witnessed by a large assembly of friends and admirers. Mr. McCrary is an exceedingly popular business man. His spouse is the daughter of James Gray, a highly respected citizen of Farnhamville. THE KEYSTONE joins their numerous well-wishers in extending them congratulations.

Kansas

The marriage took place recently of G. E. Gilmore to Miss Bertha A. Aldinger. The groom is a progressive young jeweler of Paola, and has been making many store improvements of late. The bride is the second daughter of Mr. and Mrs. J. A. Aldinger, of Paola, and is a young lady of superior accomplishments. THE KEYSTONE extends congratulations to Mr. Gilmore and his bride.

Louisiana

Hart & Parker, of 208 Texas Street, Shreveport, to whose advertising methods we have had occasion to refer eulogistically heretofore, have issued a handsomely compiled and copiously illustrated art catalogue, which furnishes abundant evidence of the increasing measure of success

which is attending this enterprising firm. The present piece of advertising literature is so suggestive and contains such a rich fund of store information that it must have been most valuable as a holiday trade bringer.

Massachusetts

H. Leonard Hall has opened a jewelry business at Baldwinville.

A notable feature of last month's happenings in the State of Massachusetts was the holding of the mayoralty elections in seventeen cities. The most animated and closely contested battle was that of Salem, where an effort was made to oust Mayor John F. Hurley, jeweler and pawnbroker, on account of the rigorous policy pursued by him in regard to the police department. Mr. Hurley's slogan was "economy and low taxes," and this appeared to please a majority of the citizens, for they returned him to office by a plurality of about 800. The city also voted to return to the license column.

H. L. Hall, formerly of Somerville, has opened a watch and jewelry repairing business in Leplantes' Block, Baldwinville.

Michigan

Harrison & Co., of Sault Ste. Marie, completed extensive alterations in their store in time for the holiday season just passed, putting in entire new fixtures in black walnut, and adding to their store an up-to-date optical room, a completely-furnished workroom and a private office. They now have a modern and most attractive establishment, and it goes without saying that they enjoyed the best business of their history the past month.

Jeweler A. T. Ward, of Saginaw, moved into his new store just before the holidays. The new room is much larger than the old one, and is fitted up with new fixtures of modern style and finish. Visiting travelers report to us that the new establishment is a regular little beauty and exceedingly attractive. We are pleased to note Mr. Ward's prosperity and expansion.

Will, Searle, of Petoskey, has only recently finished a fine addition to his residence, and tells his friends that it has now all the comforts of a city home.

R. E. Farnam, of Flint, was confined to his home a part of November and early in December by illness from a stroke of paralysis, and was a very sick man for a time, but at last reports had so far recovered as to be about business again.

Fred. Farmer, of Saginaw, has lately put in a new show window as well as other store decorations, which have added much to the attractiveness of his store. We hear that Mr. Farmer enjoyed a good holiday trade.

Jeweler G. G. Case, of Jackson, has leased the entire store at his present location and is now occupying it entirely instead of one side, as heretofore. Mr. Case has also put in new fixtures and is now in line with the times with a thoroughly modern jewelry establishment.

Jeweler Steve Swart, of West Bay City, just before the holiday season put in a new lighting plant for his store and made other improvements which have made his establishment more attractive than ever. Mr. Swart reports a fine holiday business.

Missouri

T. S. Lidstone, the popular jeweler of Dearborn, is an enthusiastic traveler. Last year he made a tour through the British Islands and France, visiting the Paris Exposition. He is at present on a trip to Niagara Falls and Canada, but the circumstances attending the latter tour are of an unusually happy nature, being the result of a recent matrimonial alliance. THE KEYSTONE extends hearty congratulations.

A. L. Dickman, jeweler-optician, of Sedalia, has recently fitted up an optical room with all modern appliances, which is a model in its way and bound to bring him a steadily-increasing trade.

G. W. Smith & Co., of Centralia, moved into new quarters in good time to take care of a generous holiday business. Their new store has new fixtures of the latest and most modern design and is in every way creditable and up to date.

R. D. Worrell, the well-known jeweler of Mexico, has bought out J. M. Pollard, the pioneer jeweler of that town and his leading competitor. Mr. Worrell will continue both stores for a time, and Mr. Pollard will conduct an exclusive optical business hereafter.

Nebraska

Business in Omaha has reached a very satisfactory standard this year. One well-known jewelry firm, the Mawhinney & Ryan Co. report the substantial increase of 25 per cent. over last year's volume. In order to meet the brisk demand during the Christmas holidays the company had to build a balcony in the rear of their store. They have also made considerable improvements in their lighting facilities.

A. S. Miller, the Steele City jeweler, is the father of an exceptionally brilliant 9-year-old boy. The promising lad is editing an interesting 4-page boys' paper.

New York

Seth R. Weed, Binghamton, has sold his stock of goods to C. W. Keeler. With the sale goes the position of watch inspector for the D. & H. and Erie railroads.

The business of the late E. A. Harris, watchmaker and jeweler, Geneva, whose death occurred at Buffalo some months ago, will not be continued.

The "Brochure of Timely Information," issued by Holmberg & Weeks, of Peekskill, is unique in that it is made up of what appears to be a series of illustrated newspaper ads., each of which deals exclusively with one description of goods. This is a mode of compiling advertising matter which must appeal to those whose spare time does not permit of their giving adequate consideration to the question of booklet advertising. The introductory remarks to Holmberg & Weeks' brochure are appropriate and well expressed, while the subject matter is correspondingly interesting.

Ohio

"What shall it be?" is the title of a clever booklet printed in two colors, and issued by C. A. Radde, the progressive jeweler of 1391 Woodland Avenue, Cleveland. It was specially gotten up for the holiday trade, and is such a bright readable document that much trade must have resulted from its circulation. The value of the booklet was supplemented by the joint issue of a well-worded circular, containing seasonable greetings and some timely reminders to holiday shoppers.

Oregon

Curtis & Co., formerly of Centralia, Wash., have disposed of part of their stock and store fixtures to B. Salick, and has opened a new store at Grant's Pass, where they will continue to do a first-class retail business.

Pennsylvania

L. Schmidt, Braddock, recently made a change in his business location. He is now established in a splendidly-furnished store at 728 Braddock Avenue.

During business hours on the evening of December 10th, while many pedestrians were passing, a thief broke the windows of the store of G. A. Shaab, of Shenandoah. The proprietor and some customers who were in the store at the time, witnessed the act from outside, and pursued the thief, but the fellow succeeded in escaping. A man named Joseph Pickalofsky was subsequently arrested on suspicion.

Tennessee

Jensen, Herzer & Jeck, the new firm at 402 Union Street, Nashville, have made a beginning under very favorable conditions. They opened some two months ago and are doing a fine business. Their repair trade is an especially profitable adjunct, and is made to counterbalance their expenses. The proprietors are a hustling trio and appear to be of the right business caliber.

Texas

George W. Knight, "the watch artist of San Marcos," has filed a suit against the city of San Marcos for injuries received in a fall from a wheel in 1899, caused by an obstruction in the street. Damages are laid at \$3000. Mr. Knight fills the civic position of alderman of San Marcos.



Manufacturing Small Articles

Article No. 15 of the serial entitled "Gold Working," begun in the November, 1900, issue of THE KEYSTONE.

FREQUENTLY a workman in the trade will feel as though he would like to manufacture some little article but the expense deters him. This remark is especially true of such things as are produced by dies. Let us imagine our workman inquires the price of making such dies as we have been describing and telling how to make. As a rule, a die that any ingenious workman should make in one day he will be charged any price from ten to twenty-five dollars. For the use of a press to employ his die prices will be made at about ten dollars a day, and loafing to be thrown in. On the other hand, if the workman should try to break the combination and do the work himself he will have all sorts of obstacles thrown in his way.

It is to "help out" in just such cases that we propose to take some little proprietary article made of sheet metal and carry it through a cheap process of manufacture. It will do as well made of German silver as of gold to illustrate our idea. Let the device be a pencil-holder.

Actual Production of a Manufactured Article

The complete article or device we propose to make is shown at Fig. 1. It consists of the split tube *A* attached to the horizontal bar *B*; said bar being provided with a pin for attaching the holder to the vest. In getting up such things we must first get up a model. This model should be practical in all respects, and, if possible, placed in actual service. Because, in many instances, objections present themselves to articles in everyday use which the inventor would never dream of. Strictly speaking, perhaps we should not have to do with the inventor's province, but confine ourselves to the manufacturing or producing department; still, we feel as if much could well be said to inventors.

In getting up such little inventions we should first be convinced of the actual need of such a device; then plan to produce it to most perfectly fill or satisfy such want. After

the device is complete, filling every requirement, set about removing ever superfluity which is not absolutely necessary. After we have accomplished this, then study to make the article as neat, tasteful and attractive as possible. In this state our device is ready for being manufactured.

Now comes the essential part we have to deal with. It is usually *the best policy to compel the method of manufacture to conform to the article produced*, and this is one of the advantages to be derived from manufacturing an article like this for one's self. Because if you took your device to some manufacturer of similar specialties he would, in nine cases out of ten, have some improvement to tack on to it of his own invention. And if you should succeed in getting past these disadvantages, he would want the affair modified to suit his tools and facilities.

When to Make Changes

We would say, however, that there are occasional instances where the modification of a portion of an invention to facilitate manufacture would be the key to its success, as by this means it could be produced at a cost which would place it at the command of all consumers. Before we commence to manufacture let us take the device in hand and analyze it to determine how each part is to be produced. The part *A* can be cut out of sheet metal by such dies as we have been considering—so can the bar *B*.

The pin, joint and catch, shown at the dotted outline, we can buy very cheap; but subsequent development may show that we can produce these adjuncts cheaper than we can buy them. Here another prospect of manufacture opens up. Pin tongues are a staple article sold at about so much by every dealer. Now, if we can produce these staples of a decidedly better quality for one-half the price we are able to buy them for by the quantity, the probabilities are we can become a successful producer of these staples. We make this digression because every inventor should discipline his mind and inventive genius by just such schooling.

We have selected the simple device we have just described as an excellent sample of an article to produce with dies of different kinds. We intend in these articles to devote a good deal of attention to the production of dies and, before we close, give some valuable

instructions as relates to the automatic production of dies by special machinery. All persons who have had anything to do with the manufacture of articles produced by dies and die presses are aware that a large portion of the expenses attending the manufacture of such special articles lies in making the dies, and consequently any methods by which the cost of such dies can be cheapened cannot fail to be well received.

Although we head these articles with "gold working," we make no apology for describing the manufacture of articles used and sold as "side lines." The press we have described can also be used for buttons, badges and a thousand and one other purposes which will suggest themselves to our readers, and for stamping stationery it cannot be excelled.

(TO BE CONTINUED)

Uninvented Inventions

Every home and workshop teems with profitable suggestions to the man with open eyes and mind, says Frank F. Coleman, in *Everybody's Magazine*.

The fortunes of Mr. Carnegie, the Rockefellers, the Armours and all their associates were founded on just such observations. The cost of refining kerosene oil is paid to-day from the despised sludge acid which used to foul our rivers and harbors. The old waste of the slaughter-houses brings in as much to-day as the flesh of the animals killed.

Nature has waste products still waiting for use. Prairie wire grass was one of these. It is now made into handsome furniture and furnishings. Corn-stalk pith is made into fillings for war ships' hulls to close water-tight the holes made by an enemy.

Find a substitute for the elastic Para rubber and your fortune is made. Celluloid and oxidized linseed oil are fair substitutes for some purposes, but nothing has yet been found that possesses the true elastic properties of rubber from Para. There is still "nothing like leather" for shoes, but the inventor may find a substitute to his profit.

The automobilist is waiting anxiously for a satisfactory power to drive his carriage. The same power would solve the vexed question of cross-town cars in New York. The Metropolitan Street Railway Company is spending thousands in experimenting with compressed air and storage battery cells.

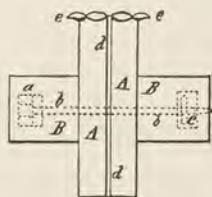


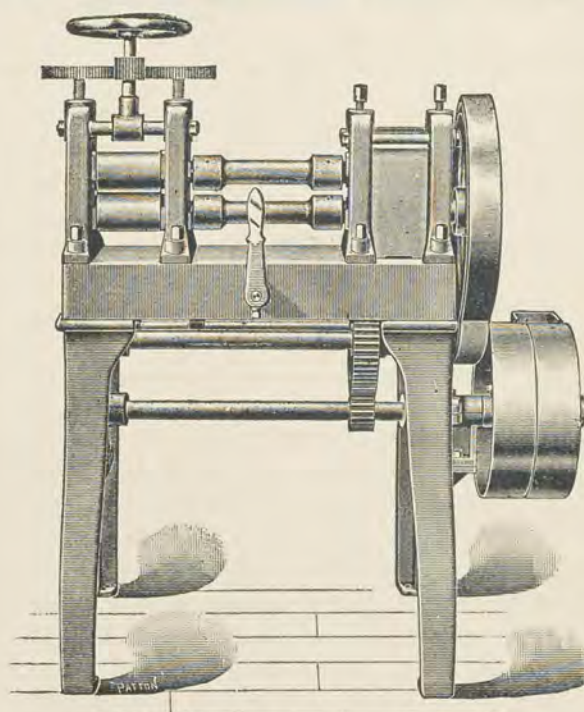
Fig. 1

THE W.W. OLIVER MANUFACTURING CO.

Builders of Fine Machinery

*We were awarded
a SILVER MEDAL
at the Pan-American
Exposition.*

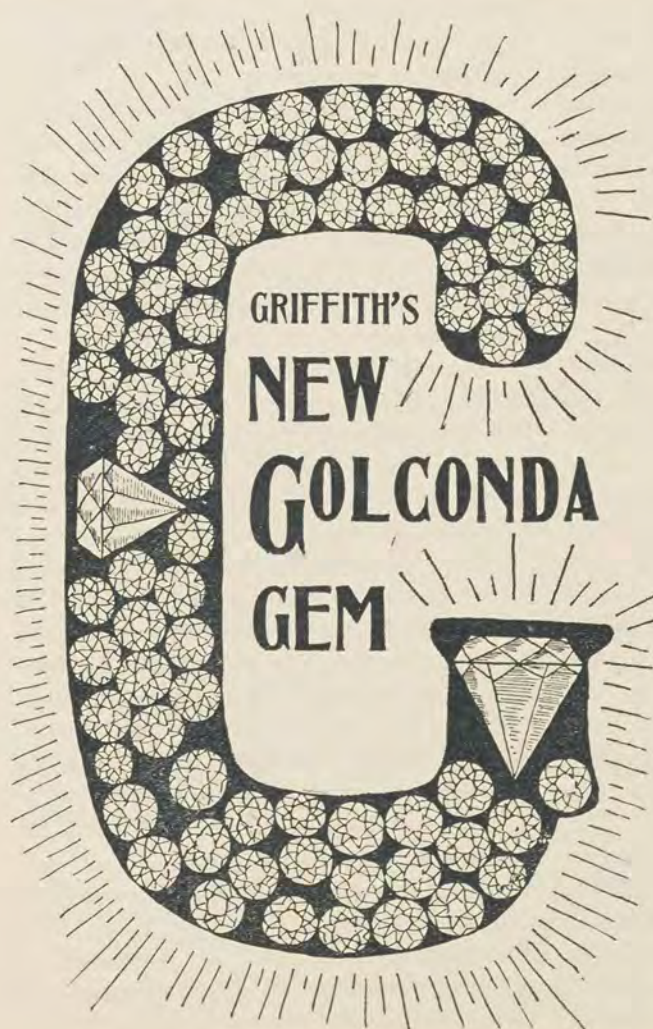
*The HIGHEST and
only award granted
on JEWELERS'
MACHINERY.*



*If, after the holidays,
you conclude to in-
crease your power
plant, let us give you
description and price
of this ROLLING
MILL.*

*Our latest catalogue
is at your call.*

1490-1492 Niagara Street, BUFFALO, N. Y., U. S. A.



The Kohinoor of White Stones

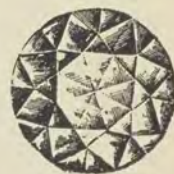
GRIFFITH'S NEW GOLCONDA GEM outshines, outsparkles and outlasts all other imitation diamonds. In fact, **GRIFFITH'S NEW GOLCONDA** comes so near being



SIDE VIEW

A Real Diamond

as to deceive all but the most expert. The great depth of the cutting below the girdle, as shown in the illustration, gives it a diamond fire and brilliancy



FRONT VIEW

peculiar to this gem. Comes in all sizes, $\frac{1}{4}$ carat to 5 carat.

GRIFFITH'S NEW GOLCONDA GEM costs no more than any imitation stone. Don't be deceived by substitutes said to be just as good. There is only one Golconda, and the words "The Golconda Gem" appear on every card or tissue.

We are now making an unusual fine line of Seamless **Gold Shell Rings**, to retail for 25 and 50c., in a great variety of designs; also Scarfs, Studs, Ear Drops and Screws, in both Solid Gold and Rolled-Plate.

The R. L. Griffith & Son Co.

All Leading Jobbers carry the GRIFFITH NEW GOLCONDA GEM. Beware of imitations. The great reputation of the Golconda has led to its being imitated.

144 to 158 Pine St., (Metcalf Building)

PROVIDENCE, R. I.

Damaskeening

Article No. 10 of the serial entitled "Cleaning and Restoring," begun in the April, 1901, issue of THE KEYSTONE.

A LITTLE practice with such a damaskeening machine as we have been describing, will soon make a workman proficient in its use. We can assure our readers a tool of this kind is well worth the bother of making, if it was never used for any other purpose than finishing new mainspring barrels, either for Swiss or English watches. We have remaining in the country very many fine English levers, in which the barrel is in a dilapidated state, which workmen are constantly required to replace. When putting in a new barrel, if we nicely damaskeen the cover, and flat lap the edge of the barrel to a mirror polish, a style of finish can be obtained which will be much nicer than the original.

Exceptional Instances

In damaskeening steel parts, it will frequently occur that a stem-wind wheel will spring or warp in hardening so much as to require considerable metal lapped away, in order to get the wheel sufficiently flat for a full revolution. In such cases a wider-faced lap should be employed, and charged with diamond dust across the entire face, instead of a ring, as described in our last article. Such laps should be of copper, and about an inch and a quarter in diameter, and well charged with diamond dust.

It is important such laps should cut with great rapidity and endure well. To insure this we cannot spare the diamond dust, and it is policy to use such a lap for a short period, and then recharge it, repeating the process until the face of the lap is fully covered with particles of diamond, and these so well imbedded as to be permanent. Such laps should not be pressed with any great force against the surface acted upon. The best method to pursue is to give great rapidity to the lap, and employ but a slight pressure; in fact, so that the particles of diamond do not make deep scores, but make them slight and often.

After the stem-wind wheel is lapped true with the wide-faced lap, it should be changed for the lap of smaller diameter with the ring face, which gives a shorter curvature to the minute scratches which produce the brilliant appearance of damaskeening. We have already mentioned the fact that the piece to be damaskeened should turn very slowly, while the lap revolves with intense rapidity. We will now consider how to accomplish this in a satisfactory manner.

The writer took up the matter of damaskeening before it had been applied to any watches in this country, except a compara-

tively small number. In the experiments that were made at that time he found that a separate motive force for driving the lap was desirable. Foot wheels employed at the time were comparatively light, and it was impossible to obtain a constant and even action of the laps; in fact, the speed would vary from the method of applying the power to the foot wheel. To overcome this he constructed a train of band wheels arranged as shown in Fig. 1.

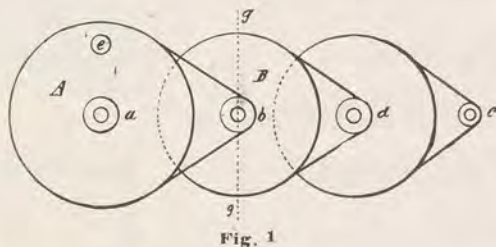


Fig. 1

As the use of such a machine was, as we may say, only occasional, the train of wheels was arranged on a bench in a back shop, and when used, the lathe (a Stark No. 2) was taken and placed temporarily in the proper position. The wheels A B C were of wood, and 12" in diameter. These wheels were cut from well-seasoned inch pine boards, and turned in a lathe. The pulleys b d were of hard wood, and each 2" in diameter, with the grain of the wood running in the direction of the axis. These wood pulleys were bored through the center with a $\frac{3}{8}$ " hole, to admit a steel spindle on which they revolved.

It is to be understood the arrangement was only intended as experimental; still for all ordinary repair shops, they will be found to give entire satisfaction. The wheel shown at A had a wood pin at e, which was employed for a crank; and the piece a was simply a hub bored like the pulley b. A magnified vertical section of B, on the line g, Fig. 1, is shown at Fig. 2. The small circle shown at c, Fig. 1, is to represent the pulley on the axle of the damaskeening lap. The lathe spindle on which the wheel to be damaskeened was placed, was revolved by a band from the hub a, Fig. 1. This band was arranged to give a revolution of the lathe arbor for one of the hub, or it could be arranged so two revolutions of the hub would produce one of the lathe spindle. It is to be understood that a band or belt motion is preferable for propelling the lap to a motion derived from cogs, because no matter how carefully the gear is cut, the multiples of the cogs will (or be apt to) show in the work.

We have now, we think, described the machinery for damaskeening so minutely in detail, that none of our readers can fail to

succeed if they seek to carry out the details. The abrasive material used with the lap, makes a great deal of difference with the brilliancy of the work. For steel wheels the material employed principally in Europe, is burned Turkey oil stone, made into powder, with a copper lap. This substance is also used for nickel movements, except a bone or ivory lap is employed. The writer at the time mentioned above, made extensive experiments in many directions, but found nothing to equal the diamond dust, except sapphire chips crushed in the same manner as diamond bort; that is, in a diamond mortar. This substance gave very brilliant results on hard steel wheels, even better than diamond, but with the drawback that it was much more difficult to keep the laps charged, as the form of the fragments of the sapphire did not hold in the lap as well as the diamond dust. For this and other causes he recommends the experimenter to confine himself to diamond laps. Holding a clean piece of chamois skin against the lap, as it revolves, will add on some occasions to the brilliancy of the work.

The next step in damaskeening is "pattern work," such as we see mostly on nickel barrels and movements. Such work requires machinery more or less complicated, as we shall explain in our next issue.

(TO BE CONTINUED)

More Sun Dials Wanted

"We are now called upon for more sun dials than ever," said a maker of optical instruments; "five times as many, in fact, for the sun dial has come into favor."

"Sun dials are made most commonly of slate or of marble; sometimes of granite. The gnomon, whose shadow cast upon the dial indicates the hour, is of bronze."

"The dial is set upon a pedestal of stone, or of terra cotta, or sometimes of masonry. And sometimes a support that will serve this purpose well may be come upon already carved; or some quaint object is brought into this use."

"One sun dial now in place has for pedestal the newel post from the marble staircase of the Stewart House at Fifth Avenue and Thirty-fourth Street in this city. We are making now a dial whose support will be an old capstan."

"We are now fashioning for an ancient sun dial brought from abroad to replace the original, long since lost from it, a gnomon that will be in keeping with the dial in character and design and of like age with it, at least in appearance."

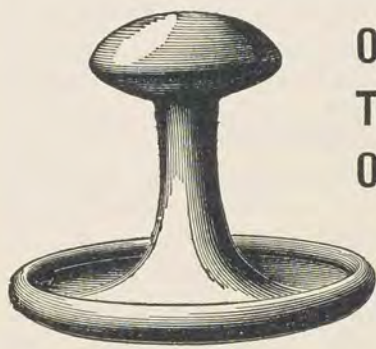
"Sun dials, complete as to the dial, but exclusive of the supporting pedestal, cost, according to the material and the labor devoted to them, from about \$20 to \$120."

—New York Sun

"Please find enclosed draft for one dollar for another year's subscription to The Keystone. I think The Keystone journal is the best thing ever issued to the local jewelers."—J. W. Williams, Jeweler, Watonga, Oklahoma Territory.

The Giant of Collar Buttons

in Quality
in Sales



One Million Five Hundred
Thousand Krementz
One-Piece Collar Buttons
made and sold within
the last year

WHY?

Because of their HIGHEST QUALITY, BEST CONSTRUCTION, GIVING THE MOST WEAR, AND GREATEST COMFORT and their IRON-CLAD GUARANTEE.

To verify this we invite the trade to read "The Story of a Collar Button, with Illustrations," which may be had FREE for the asking, and to try the experiment suggested on page 5 of that booklet.

Extract from "Printers' Ink,"
Nov. 23, 1898.

The Little Schoolmaster now suggests, to every pupil in his class, to send a two-cent stamp to Krementz & Co., 49 Chestnut Street, Newark, N. J., and ask to be favored with a copy of their leaflet, "The Story of a Collar Button." Afterward, if any pupil will send to *Printers' Ink* another leaflet, new or old, that is half as good as this one, or that approaches it in excellence, the deserving student will be rewarded with one of *Printers' Ink's* souvenir spoons as an acknowledgment of his discovery and contribution. "The Story of a Collar Button" is the best piece of advertisement construction that has come to *Printers' Ink's* attention in the year of our Lord 1898.

Should you wish to utilize this booklet to increase your collar button business, we will, on receipt of your order, print your card upon and send you a quantity of them.

Krementz One-Piece Collar Buttons are stamped as follows, ON BACK:



Patent Sustained by United States Supreme Court.

Quality and Construction have made Our Reputation.

All Krementz Collar Buttons are Manufactured by

KREMENTZ & CO.,

in their Factory

49 Chestnut Street,
NEWARK, N. J.

PARKS BROS. & ROGERS,
20 Maiden Lane, New York.
Selling Agents to Jobbing Trade.

A PROFIT PULLER



FOR A QUARTER

You can sell your customers a Tray, hand-engraved with the name of your town, and make

OVER 100 PER CENT. PROFIT

on the sale. Why not give us your order for a trial half gross or so? Will cost you but \$1.30 for a dozen, with special engraving like the cut. Can you afford to let it pass?

SOUVENIRS MADE FROM

SILVER-ALUMINUM SELL AT SIGHT

Why not be the first one in your town to prove it?
For further particulars address

DEPT. L

E. A. FARGO & COMPANY
ATTLEBORO, MASS.



X Rees School. Steele Memorial Building.

Write for particulars and samples of students' work.

F. H. REES ENGRAVING SCHOOL

ESTABLISHED 1890.

ADVANCE

in your business life; it is not difficult to do fine engraving if you know how. Come here and learn the most advanced ideas in this beautiful art.

Hundreds of graduates are enjoying good positions and are making MONEY.

Hundreds of traveling salesmen have visited this school and from them you can learn that this is the best School for light, location and equipment that money and experience can produce, and the tuition is as low as any good school.

Personal instructions; no assistants are employed. The proprietor and instructor of this School is the author of Modern Letter Engraving, Jewelry Designing and Engraving and has instructed hundreds of students personally.

The Best is the Cheapest

ELMIRA, N. Y.

Coating Art Metal Work With Precious Metals

Article No. 47 of the serial entitled "Electro-Metallurgy," begun in the March, 1898, issue of THE KEYSTONE.



GOOD solution for gilding such tracery patterns as we have described, can be made as follows: The formula is for one quart, but of course can be varied so as to be adapted for any quantity. Dissolve the contents of three fifteen grain bottles of gold chloride, in a pint of distilled water, or water from melted ice. Rain water in regions where much coal smoke prevails is not fit for use. Any water except distilled is better, by being filtered. A lock of cotton wet and loosely packed in the neck of a glass funnel, answers nicely for this purpose.

Making a Gilding Solution

Dissolve four ounces of pure cyanide of potassium in another pint of such water. Now pour slowly the cyanide solution into the solution of chloride of gold, as long as any precipitate falls. The idea is, cyanide of potassium solution added to the gold solution, forms a cyanide of gold which is insoluble in water, but is soluble in water containing an excess of cyanide of potassium; that is, more than is absolutely necessary to precipitate the gold. Hence the necessity of watching the operation very carefully just at the turning point, because the least excess of cyanide more than to precipitate all the gold, redissolves a portion of the gold which is thrown away in the operation of washing.

As soon as all the gold is precipitated, the solution should be allowed to perfectly settle, when the supernatant liquor is poured off, and fresh water placed upon the precipitate and allowed again to settle, and the water again poured off, repeating the operation three or four times, to wash the precipitate. Some inexperienced workmen add enough cyanide of potassium to the chloride of gold solution, to both precipitate and again dissolve the gold. This plan is not correct.

After the cyanide of gold is well washed, enough of strong cyanide solution is poured upon it, to dissolve the cyanide of gold, when enough pure water is added to make one quart. About a liquid ounce of the strong cyanide solution should be added in excess of the quantity necessary to dissolve the cyanide of gold. This solution is worked hot, that is, at 140° F. The method of keeping the solutions hot is to make a three-legged support of a quarter of an inch round iron.

These legs should be long enough to support a basin of water over a low kerosene lamp. In this basin of water is placed the glass cell containing the gold solution. In the absence of a thermometer one can pretty

well determine the proper temperature by heating the water to such a degree as the hand can just comfortably be held in. The color of the gilding much depends on the temperature of the solution; also on the depth to which the anode is immersed.

The anode should in every instance be of pure gold. Where gilding to alloy is desired, add cyanide of copper prepared precisely as was directed for preparing cyanide of gold, except in this instance a solution of sulphate of copper is used instead of a solution of chloride of gold. Such cyanide of copper is added to the gold solution until a deposit of the desired color is obtained. In this respect, that is as regards the color of the deposit, a great deal depends on the operator.

Suppose we are gilding with a solution which gives a good red gold deposit which would be satisfactory for gilding watch cases and jewelry; this same solution could be made to do beautiful Roman gold coloring, by only allowing a mere corner of the anode to dip in the solution. We would not advise the use of alloyed anodes for the beginner, as all the effects of color can be obtained by manipulating the anode. For instance, we find our solution is getting poor in copper, and not giving a good red gold deposit; by employing a pure copper anode there will soon be added enough copper to bring up the color.

Gilding in Colored Gold

Silver in connection with a gold bath should in all cases be avoided except when we wish to make what is called a green gold deposit, and for this we mix a little plain silver solution with a gold solution until the proper color is obtained. Such gold solution is good for nothing else except green gold, and should be carefully kept apart from other gold solutions. Nickel can be combined with a gold solution, but such solution requires special care both in preparation and use. It is well for the beginner to avoid as much as possible, all experiments, but confine his efforts to getting out good work with the materials he knows how to handle. One especial care should be observed by the novice in gilding, which is, to not let his gold solution run down; that is, grow deficient in gold.

To avoid this, take an ordinary tobacco pipe—not the hard kind, but that of soft material which when new readily adheres to the tongue. Break off the stem to about an inch in length. Heat the bowl and fill the hole in the short stem with shellac. Insert in the bowl (from the inside) a copper wire, so the shellac fastens the wire securely; but the copper wire should not protrude through the shellac so as to make electrical connection except inside the bowl. Make a hook on the wire so it can be hung on the edge of the cell holding the gilding solution. Fill the pipe

bowl with a cyanide solution, and arrange the pipe bowl so the edge rises above the surface of the gilding solution. Attach the copper wire from the pipe bowl, to the negative pole, and turn the dynamo for fifteen minutes, to dissolve gold from the anode. The pipe bowl prevents the solution from depositing any gold cathode, and in this way we should enrich our gold solution occasionally.

(TO BE CONTINUED)

Origin of Amber

Much interest has attached to this substance from remote antiquity, partly from the obscurity of its origin, and partly from a belief in certain wonderful properties it was supposed to possess. It is a brittle, resinous substance, found as a fossil in some soils, and also on certain seashores, in small, irregular masses, generally translucent, but sometimes quite clear. The color is a light or deep yellow, and occasionally of a reddish, or dark brown. The source of amber was for a long time doubtful. By some it was supposed to be a mineral, but is now universally believed to be a fossil resin, the product of an extinct species of pine. Whenever found in its natural location, it is associated with carbonized wood or coal. The chief supplies of amber come from the shores of the Baltic Sea, where it is apparently washed up by the waves. The largest mass known is in the royal museum at Berlin, in Prussia, and weighs thirteen pounds. Amber is susceptible of a fine polish, and is often made into ornaments, such as beads, crosses, ear-rings, necklaces, mouth-pieces of pipes, etc. The transparent specimens sometimes contain insects so perfectly and delicately preserved that they could only have become incorporated in it when in a semi-fluid state. Amber becomes electric by friction, and it was from the Greek word *elektron*, which means amber, that the important science of electricity derived its name. Six hundred years before the Christian era, Thales, of Miletus, one of the "seven wise men of Greece," knew that after yellow amber had been rubbed briskly with wool, it would attract light bodies, straw, etc. This was considered its power of suction, and served to invest the substance with a superstitious interest. Many centuries later, Pliny, the celebrated naturalist, mentions the same fact about *elektron*, of amber. But it is now well known that amber possesses the property of becoming negatively electric only in common with other resinous substances.

Costliest Thimble on Record

Think of it, a thimble which cost \$65,000 in American money! And think of a husband who presents his wife with such a gift! It belongs to the Queen of Siam.

Thimbles were not in use in Siam until a comparatively recent date. The king seeing that English and American women visiting his court used thimbles, had one made for his wife. The thimble is of gold, enriched with precious stones. It is shaped like a partially-opened lotus flower, each petal bearing the interlaced initials of the sovereign and his wife in amethysts, rubies, emeralds and topazes. Around the rim of the thimble can be read the date of the marriage of the royal pair according to the Siamese and European calendars, each number and each letter being of alternate diamonds and pearls.

Every Dollar's Worth

of value, every minute's swiftness at our command, is the sort of honest, satisfying service we extend to every consignor of

Old Gold and Silver

We want your old metal. Even your plated scraps we want. We want your business not once, but always. If we have it once we shall have it always.

No man is ever the victim of "shrinkage" in our hands; no man ever waits days for his remittances; no man can realize higher values elsewhere.

Full, liberal valuation is half our policy. Cash returns in three to five days is the other half.

We pay for	Old Gold, 8 K., .	32c. a dwt.
	Old Gold, 10 K., .	40c. "
	Old Gold, 12 K., .	48c. "
	Old Gold, 14 K., .	56c. "
	Old Gold, 18 K., .	72c. "
	Gold-Plated Scraps, .	20 to 35c. an ounce
	Old Silver (fluctuating)	Very highest market price

Check by return mail on old gold, silver and plated scraps—subject to your acceptance; otherwise we return scraps, prepaid.

If you are not getting every pennysworth of value for your old metal, if you are not realizing prices like these, if you are kept waiting for your money—

May we not prove to you just what proper, prompt, profitable treatment is?

A small trial shipment to us now, you'll thankfully remember through all your after years trading with us.

All we want is one chance.

THOMAS J. DEE & COMPANY

Refiners and Smelters

67 and 69 Washington Street, CHICAGO



Why Listen to Others?

When we say our Benches are of Solid Oak, and made per specifications described below, **WE MEAN IT.**

Why Should We Defraud You?

Among the many testimonials we receive, this is what Mr. W. E. Osterwald, Festus, Mo., has to say: "Bench received this A. M. I am *very much* pleased with it. It is really better than I expected for the money; as good as any \$20.00 bench."



Solid oak. **Curtain Top.** Paneled doors, sides and back. Fine cabinet finish. Drawers lock automatically. One drawer arranged for chucks. Brass trimmings on knobs. Lock and key on right side of bench. Dimensions: 44 inches long, 40 inches high, 26 inches wide. Solid selected oak throughout (no soft wood bottom and back, as most other benches are made). Guaranteed in every respect.

SPECIAL PRICE, \$12.50
Cash with Order,

Cut is a photo. reproduction, and every bench is exactly per cut.

Watchmakers' Bench. Open Top.

Solid oak throughout, paneled doors, sides and back. Fine cabinet finish. One drawer arranged for chucks; also apron drawer. Has fancy knobs. Size: 40 inches long, 40 inches high, 20 inches wide.

SPECIAL PRICE, \$8.80
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NO EXTRA CHARGE FOR CRATING OR CARTAGE.

KING & EISELE, Manufacturers, 14 to 20 North Division St., Buffalo, N. Y.
342 & 344 Washington St.,

Cylinder Escapement

Article No. 6 of the serial entitled "The Cylinder Escapement," begun in the August, 1901, issue of THE KEYSTONE.

LET us now, as we directed in our former instructions, draw a flattened curve to represent the acting surface of the entrance lip of our cylinder as if it were in direct contact with the impulse face of the tooth. To delineate the exit lip we draw from the center g (Fig. 12 b) to the radial line $g k$ said line passing through the point of contact between the

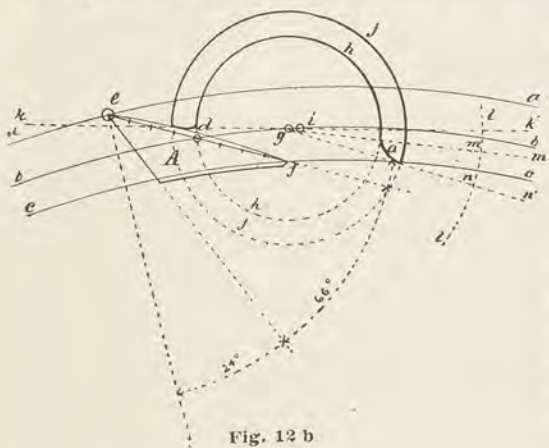


Fig. 12 b

tooth and entrance lip of the cylinder. Let us next continue this line on the opposite side of the point g , as shown at $g k'$, and we thus bisect the cylinder shell into two equal parts of 180° each. As we explained in former articles, the entire extent of the cylinder half shell is 196° . We now set our dividers to the radius of any convenient arc which we have divided into degrees, and from g as a center sweep the short arc $l l'$, and from the intersection of this arc with the line $g k'$ we lay off 16° on the said arc $l l'$ and establish the point n , from g as a center draw the radial line $g n'$. Take 10° from the same parent arc and establish the point m , then draw the line $g m'$. Now the arc on the circles $h j$ between the lines $g n'$ and $g m'$ limit the extent of the exit lip of the cylinder and the arc between the lines $g k'$ and $g m'$ represent the locking surface of the cylinder shell.

To delineate the V arms we refer to Fig. 13. Here again we draw the arc $a b c$ and delineate a tooth as before. From the

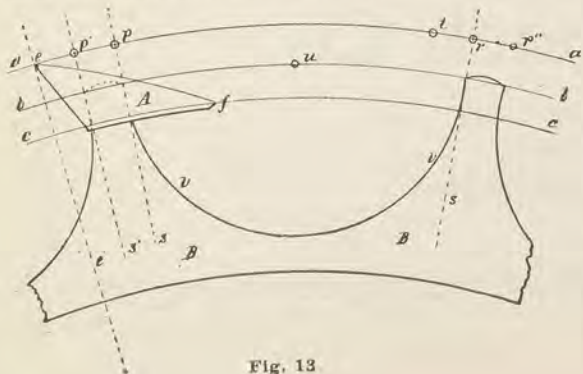


Fig. 13

point e located at the heel of the tooth we draw the radial line $e e'$. From the point e we lay off on the arc a five degrees and establish the point p ; we halve this space and draw the short radial line $p' s'$ and $p s$. From the point e on the arc A we lay off 24° and establish the point t , which locates the heel of the next tooth in advance of A . At $2\frac{1}{2}^\circ$ to the right of the point t we locate the point r and draw the short radial line $r s$. On the arc b and half way between the lines $p s$ and $r s$, we establish the point u and from it as a center we sweep the arc v defining the curve of the U arms. We have now given detailed instructions for drawing a cylinder escapement in all of its details except the extent of the banking slot of the cylinder, which is usually made to embrace an angular extent of 270° , consequently the pillar of the cylinder will not measure more than 90° of angular extent.

There is no escapement constructed where carefully-made drawings tend more to perfect knowledge of the action than the cylinder. But it is necessary with the pupil to institute a careful analysis of the actions involved. In writing on a subject of this kind it is extremely perplexing to know when to stop; not that there is so much danger of saying too much as there is in not having the words read with attention.

As an illustration, let us consider the subject of depth between the cylinder and the escape wheel. As stated in a former article, 196° of cylinder shell should be employed; but suppose we find a watch in which the half shell has had too much cut away, so the tooth on entering the half shell after parting with the entrance lip does not strike dead on the inside of the shell, but encounters the edge of the exit lip. In this case the impulse of the balance would cause the tooth to slightly retrograde and the watch would go but would lack a good motion. In such an instance a very slight advance of the chariot would remedy the fault—not perfectly remedy it, but patch up, so to speak—and the watch would run.

In this day, fine cylinder watches are not made and only the common kind are met with, and for this reason the student should familiarize himself with all the imaginary faults which could occur from bad construction. The best way to do this is to delineate what he (the student) knows to be a faulty escapement, as, for instance, a cylinder in which too much of the half shell is cut away; but in every instance let the tooth be of the correct form. Then delineate an escapement in which the cylinder is correct but the teeth faulty; also change the thickness of the cylinder shell, so as to make the teeth too short. This sort of practice makes

the pupil think and study and he will acquire a knowledge which will never be forgotten, but always be present to aid him in the puzzles to which the practical watchmaker is every day subject.

[THE END]

The Diamond Trade of France

One of the most important branches of commerce in the French capital is the trade in cut, unset diamonds, and a large amount of capital is involved in this business, several of the larger business houses having a capital stock of millions of francs invested. The diamonds are generally sold "on paper," i. e., in smaller or larger lots wrapped in a kind of tissue paper, and enormous quantities of these brilliant gems change hands every day. Uncut stones are offered for sale also, but the great market for rough, uncut diamonds is London. The principal diamond houses of Paris buy their uncut stones from English importers in London and have them cut in Amsterdam, from where they are reshipped to Paris, to be sorted and put on the market.

Nearly every foreign country looks to Paris as the best market to supply its need of cut diamonds, and there is a continuous stream of foreigners from all over the globe to the City on the Seine, and all tongues are heard there during the business season, viz., in the spring and fall. But besides visits from foreigners, every diamond house has established its relations in the four corners of the world, and receives with every mail orders for certain specified articles in the diamond line. Italy, for instance, a good customer, buys with few exceptions the rather cheap grades, while Turkey prefers yellow or "bywater," and India may send orders for yellow pairs of brilliants and uncut stones. It is universally known that the price of cut diamonds is determined to a great extent by the "water," or grade, that is to say, the whiter and purer the diamond, the larger the price it will command, and the most difficult thing for a diamond merchant is to obtain a pair of blue-white stones for ear buttons.

An army of brokers, courtiers and courtieres (for a great many women make a living in the diamond brokerage) makes daily calls at the various diamond houses; they charge generally one per cent. commission on sales.

A World-Wide Market

Every wholesale diamond house has its business connections with foreign countries, and a book-keeper and correspondent in this line has to be thoroughly conversant with at least three or four languages. There are large houses, having a permanent consignment of 200,000 francs in diamonds in the large East India cities: Batavia, Semarang, Calcutta, Bombay, etc., and each country prefers to give its orders, and submit its offers and prices in its own tongue, in order to prevent possible misunderstanding. This would seem to be a very hard task for a manager of a house in Paris, but as nearly all Hollanders and Germans, who represent the majority of the bookkeepers and correspondents in this line, understand three or four languages beside their native tongue and are able to speak these languages and correspond without any apparent trouble, much of this polyglot difficulty is overcome by assuring the services of a good correspondent, native of Holland or Germany; these gentlemen command good salaries and are constantly employed.

The New England Watch Co.

Waterbury, Conn.

We extend New Year's Greeting and Congratulations for the prosperous year just passed.

1902 will be a busy year for us all, and with this in view we have supplied ourselves with better equipment than ever before, and are prepared to fill the increasing demand of our large clientage perfectly.

Our Enamel Watches were never more popular than at present. Remember we have both the **ELF** and **CAVOUR** in full enameled cases, all colors. We sent you our Enamel Booklet last fall, and trust you have familiarized yourself with this line. If not, it will pay you to look into it.

We shall have a number of new patterns to offer later.

The New England Watch Co.

OFFICES

{ 37 & 39 Maiden Lane, NEW YORK
131-137 Wabash Ave., CHICAGO
Spreckels Building, SAN FRANCISCO

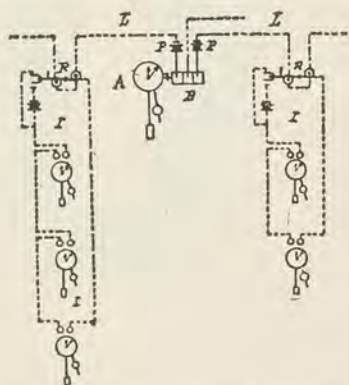
Unification of the Time by Electricity

[Translated for The Keystone from Deutsche Uhrenmacher Zeitung.]

ONE of the advantages of electricity applied to chronometry is unquestionably the facility with which the time can be maintained by a master clock; the other clocks, called secondary, possessing like it a motive power, a train and pendulum, and going in complete independence of the directing timepiece.

One of the means applied for obtaining this result is the system of setting the time in which the current emitted by the governing clock corrects instantaneously the deviations which may have occurred between two emissions. The intervals separating two successive settings of the time is always the same, but it may be longer or shorter, and in most cases, it does not extend beyond one hour. The contrivance of frequent emissions originated by Messrs. Meister Brothers, clock manufacturers, has given great satisfaction on the railway line on which it has been applied.

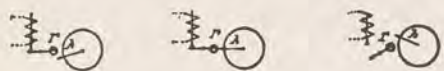
The governing clock is at *A*, and contacts are arranged at *B* to close the circuit *LL* of the batteries of the line *PP*. The line current passes through the relays *R R*,



which form in their turn the special circuits *II*, in which are placed the secondary clocks to be regulated. Each of these clocks indicates the seconds, like the directing clock, and it is furnished with an electro-magnet, which becomes active every time that the current is passed into the local circuit of which it is a part. The armature of this electrode is movable around a center placed between the two extremities, and the end turned towards the train, and in consequence opposite to the magnetic core, is furnished with a sort of demi-cylindrical locking *r*, against which strikes at every complete turn of the second wheel, a finger *h*, mounted on the arbor of this last mobile.

The secondary clocks are adjusted in such a way as to produce an advance of one second a minute, and the contacts at *B* produced by the mother clock occur from the

fifty-fourth second during the six following seconds. During this period the current passes in the principal line and in the secondary circuits. The armatures of the electrodes are attracted by the emission of the current



and the lockings are thus brought on the passage of the finger *h* of each clock. After about five seconds, these fingers come on the lockings, the hands of the dial are stopped, and the pendulum beats the air for a second, at the end of which the circuits are opened at *B* by the mother clock. The secondary clocks then resume their progress in unison with the directing clock.

Thus the seconds hand of the secondary clocks is stopped after having passed over an entire turn in fifty-nine seconds, indicated by the mother clock, and it sets out again of itself at the expiration of the sixtieth second; that is to say, at the commencement of the following minute.

If it should happen that the current did not pass at the time of a contact at *B*, the clocks would be two seconds in advance at the end of the second minute, and the emission of the following current would attract the electrodes at the instant when the hands of the clocks marked fifty-eight seconds. The stoppage would last for two seconds, after which the concordance of the time would be re-established as described above. Accordingly, it is seen that the current may fail five times in succession without the progress of the clocks being disturbed during more than five minutes, provided that at the commencement of the sixth minute the passage of the electric current is re-established.

An Invention to Prevent Collisions

Jan Szcapanik, a young Polish inventor, has produced several sensational inventions. The first place among his useful inventions is taken by a contrivance against collisions on railways and at sea. The apparatus, the basis of which is the effect produced by ultra violet rays, is to be established in front of the locomotive. Over the apparatus an electric lamp is placed, of which the rays are projected through the air for a distance of four kilometers, and communicate with the apparatus carried by other trains and warn the engineer of approaching danger. The same apparatus is used for indicating the explosion of a cannon at a distance of four kilometers.

An interesting German invention is a waistcoat proof against shot and sword. Experiments have been made with surprising results. Neither shot nor stiletto damage the waistcoat at all.

Farmers' Telephones

"Telephones are being placed in the homes of dozens of farmers in Western Missouri, Kansas and Oklahoma," says the *Kansas City Star*. "An official of the Missouri and Kansas Telephone Company said the other day that that corporation has two special men working in Jackson and adjoining counties soliciting farmers to put in phones, and that they are meeting with marked success.

"It would surprise you," this official continued, "to know how many Oklahoma and Kansas ranchmen are putting in phones. Numbers of them are a good ways from a railway station. They are anxious to keep in close touch with the market, and they find the telephone both serviceable and inexpensive for this purpose. There is one man near Blackwell who has five phones upon his place. It is thus possible for him to open communications with the outside world, no matter where he is upon his place.

"Telephones are being widely used by farmers in the East. They have found them a great convenience. They save them many trips to town. This is especially true where rural free mail delivery routes have been established. The farmer who wants a small article telephones to the mail carrier before he leaves town and asks him to bring it. This the carrier is allowed by the Government to do, and he can collect whatever sum may be agreed upon for it. The farmer is thus saved a trip to town, and the mail carrier increases his income.

"The plan we have adopted in the community adjacent to Kansas City is as follows: We visit a neighborhood and learn how many farmers there are who are willing to be on our line. If there are enough the line is built, and a long-distance phone put in the home of each of our patrons. The line is connected with the nearest local exchange, and he can talk to any person having a phone in this exchange for nothing. He has to pay only when he uses the toll line. With the phone with which we provide the farmer he can talk to Kansas City and St. Louis as easily as he can to his nearest neighbor."

Alonzo Burt, manager of the Missouri and Kansas Telephone Company, thinks the farmers' telephones will prove a great source of revenue. It has already done much to create interest among the farmers.

The farmer or ranchman who is remote from a local exchange is required to build his own line to the nearest toll line. After he has done this the company rents him a telephone at a nominal rate, and he is required to pay besides the regular toll-line rates when he uses it.

66
Established
1858

GEO. H. FULLER & SON CO.

Incorporated
1898

Chicago Office:
103 State Street, Columbus Memorial Building

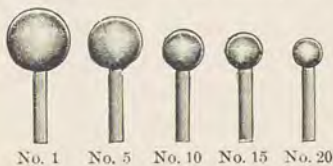
PAWTUCKET, RHODE ISLAND

Manufacture all kinds of

JEWELERS' FINDINGS

and sell direct to the jobbers and manufacturers only. Retail jewelers can buy our goods from all jobbers.

Snap Balls
for Chatelaine Bags, Purses, etc.



Silver, Silver-Plated and
Rolled-Plate.



Take-apart Button Backs.



No. 249 No. 250
Rolled-Plate and 10 K. Gold.

No. 124. 14 K. SEAMLESS GOLD FILLED JUMP RINGS.



Our NEW SPRING LINE of

Hand-Carved Rings

is now ready. It contains a great variety of entirely new and original designs, showing a profusion of Beautiful Studies, Figures, Faces, Masks, Animals, Scroll and Renaissance Pierced Work for ladies and gentlemen.

Our **Mounted Diamond Goods**

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Over 7000 Original Designs in Rose Diamond and Pearl and Opal and other

SET RINGS



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Manufacturers

LOOSE DIAMONDS in lots to suit 35 Gold Street, New York



IF YOU ARE NOT SATISFIED

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you are using or selling, if they give poor and unsteady light, smoke, smell or go out unexpectedly, write to us and perhaps we can suggest the remedy, but the simplest and cheapest way out is to lay them aside and get our

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that are always right and ready for use and guaranteed to do as represented if properly handled or money refunded. A poorly lighted store does not draw trade, and business lost this way will more than offset the cost of our lamps. The average cost of running them is 15 to 30 cents per month.



400 Candle Power
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ZINC ETCHING
HALF TONE AND FINE COLOR WORK
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TELEPHONE CONNECTION

Workshop Notes

Subscribers wishing inquiries answered in this department must send name and address—not for publication, but as an evidence of good faith. No attention will be paid to anonymous communications. Questions will be answered in the order in which they are received.

An INDEX to the questions answered in Workshop Notes department for each year accompanies each December number. Subscribers are requested to preserve these indexes, and, before mailing questions, to refer to them, as similar questions may have been answered in previous issues. The indexes are arranged alphabetically, according to subject covered in each answer, and tell the issue and page on which the information may be found.

"Swing Pendulum."—(1) Please tell me how to arrange a clock to use a large doll for a pendulum, to play up and down, and make one beat per second. The escapement is what puzzles me.—There was some time ago a small clock made that contained a swing with a figure in it that swung up and down. This was accomplished by attaching the swing to the lever of the clock; when the lever vibrated back and forth, it gave the power to keep the swing moving up and down, but we do not believe it could be made to beat seconds.

(2) I have a dry battery that I wish to use to run a motor, armature of which is wound with No. 18 wire. How long will it last?—The life of a dry battery on a motor such as you describe would be very precarious. We would suggest that you try some other source of power for it.

"Swiss-American."—I would like to know how to put a Swiss movement into an American watch case, if it is possible.—It would be difficult for us to give instructions for casing a Swiss movement in an American case without having both the case and the movement at hand. As a general rule of practice, it can be done by fitting a ring to the movement, which in turn fits into the case, if the case is large enough to admit of the proceeding, but not all workshops are equipped with the proper facilities for doing such work. It would seem the better plan, if we have such a movement to case, to send it to some reliable manufacturer for casing. Recently the Swiss manufacturers have noticed this drawback to the sale of their movements in this country, and now many of them are making movements to fit the regular American cases.

"Transparent."—Will you give the formula for making the lacquer used on silverware to keep it from tarnishing?—Invisible collodion lacquer is the kind generally used for this purpose. It is prepared by dissolving soluble gun cotton in a mixture composed of three parts of ether and one part of alcohol. Wood alcohol will answer quite as well for this purpose as that distilled from grain, and has the advantage of being much cheaper. The proper preparation of such lacquer requires a good deal of experience, and the novice may not achieve very good results. For this reason, many dealers prefer to buy the ready-made lacquer. The application of the lacquer is effected either by dipping or with the aid of a soft camelhair brush, and if properly applied, a coating of it is absolutely invisible.

"Window Clock."—I have a window clock which does not give me satisfaction; in the summer it keeps good time, but when it becomes cold it is always slow. I do not know why. The dial is made of wood (board) and is half inch thick and 9½ inches round circle. I think I could put some kind of a movement in it with a longer pendulum, and it will not show from the outside. Kindly favor me with your information so I can have a good clock for time.—You do not state how much the clock loses during the winter months. If we had a full description of your clock and the kind of a pendulum it has, we might be able to tell the cause of it losing during the winter months. In most cases where the pendulum is made of metal a clock will gain in winter and lose during the summer because steel or brass will contract in cold weather, and therefore make the pendulum shorter and it will then gain. It does just the reverse during the summer. It may be possible that the oil becomes thick. In this case it will retard the

action and the clock would then gain. It would be advisable to clean the clock thoroughly, and in oiling use the best oil you can get. Do this every year and just before the cold weather sets in. This may help it to keep better time during the cold weather. It is almost impossible to get perfect time in a clock with a short pendulum. The best kind of a clock to have for a regulator is one that will beat seconds and has a mercury pendulum. There is a movement (No. 86) made by Seth Thomas Clock Co. that is very good, and you can make it fit on your dial and the pendulum will not show. This movement can be bought from the G. S. Lovell Clock Co., 1019 Market Street, Philadelphia, Pa.

"Watch Plates."—Will cyanide of potassium affect watch plates in any way; that is, will it discolor them, after a time, if I wash in soap and water, then in alcohol and finally dry in sawdust?—We do not think it possible for the cyanide to discolor plates after such an operation as you mention. The amount of the cyanide that would be left, if any, would be so infinitesimal that it would be incapable of any chemical action. Of course, in using the cyanide solution, it is well not to have it too strong. An ounce of cyanide to a pint of water will, as a rule, be found quite as efficacious as two ounces to the pint.

"Meerschaum."—(1) I have a meerschaum pipe the bowl of which is broken straight across, a little above the stem. Would quicklime, while of egg and plaster of paris cement it? I do not want to use a band.—The cement made as you suggest might give good results, but in using it, it would be necessary to work very quickly, in order to get the parts into proper position before the cement would "set." It would therefore seem best to resort to cement of another kind, and a very good one may be prepared as follows: Make up a mixture of about the consistency of thick cream, using the white of an egg and finely powdered quicklime, but do not use any of the plaster of paris. Such cement is applied to both parts to be joined with a camelhair brush and is then allowed to dry very slowly, and when thoroughly dry all excess cement is scraped off. In a break such as you have on hand, it is a difficult matter to achieve satisfactory results with cement alone, for no matter what cement you use, it may not be strong enough to stand and at the same time resist the action of the heat that it will necessarily be subjected to. Inasmuch as you do not desire to place a band around the break, it will probably be a good plan to insert a couple of steady pins. This can readily be accomplished by cutting off pieces of suitable length from a sewing needle and allowing them to enter each part of the pipe where broken a short distance—say about an eighth of an inch in each piece. Such pieces can probably be forced in without drilling. Repairing a pipe of this kind sometimes proves a difficult matter, and it is also difficult to give proper instructions for doing it without seeing the work. If you doubt your ability to make a success of it, we would suggest that you send it to some manufacturer who makes a specialty of such repairs. There are quite a few who do this; in Philadelphia we have John Middleton, 219 Walnut Street.

(2) Where can I get small parts made for Swiss watches that are not carried in stock by the material houses?—You will find the announcements of several repairers to the trade on our advertising pages; any of these should be able to make the parts desired. If you can ascertain the name of the importer of the movement, you can probably procure the material in stock, as the importers, as a rule, carry a line of material for the movements they handle. For instance, if the movement be a Longines or Agassiz, imported by A. Wittnauer, 13 Maiden Lane, New York, you could obtain the material through that house. Likewise, with the Vacheron & Constantin, which is imported by Edmond C. Robert, 3 Maiden Lane, New York.

(3) What will remove fly specks from enameled clocks and not destroy the polish?—The excrement of insects like flies contains acids of different kinds, very corrosive in their action. The resultant spots from such excrement can generally be polished out with a paste made up of pulverized rotten stone

and olive oil. As a rule, the best plan is to polish the whole case, giving extra attention to the corroded spots; these should have an extra rubbing. After the polishing operation, clean off the olive oil with a clean, soft flannel cloth.

(4) The address of firms (if any) making wooden clocks.—We do not know of any firms making such clocks.

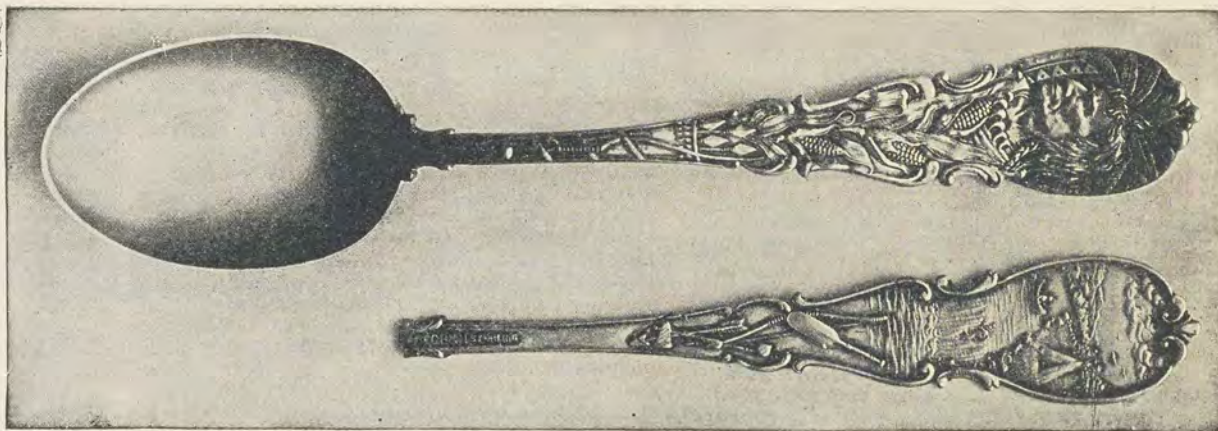
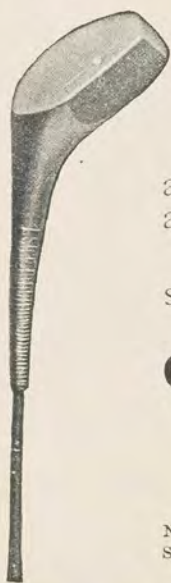
(5) Describe a good burglar alarm system for either open or closed circuit?—Such a system is fully described in our reply to "Alarm," page 399, April, 1901, issue of THE KEYSTONE.

"Staff-Drilling."—I would like to know how to construct the blade of a diamond drill for drilling hard steel. I have strong grounds for believing that a certain celebrated watchmaker does much of his staff-drilling with something other than a steel tool.—Questions similar to the above are not infrequently propounded to us. A very good reply has been made in a little book we publish, "Pivots and Pivoting," as follows: "Drilling to insert pivots is something about which there is more quackery than in any other part of watch repairing. Some specialists in pivoting make it appear that they have a secret manner of hardening a drill or have the keys to other mysterious processes. Of course, such claims are nonsensical. If any particular substance had the property of giving extra toughness and hardness to steel, does any one fancy our watch factories would be without it, or that such extensive manufacturers of cutlery as Rogers and Westenholm would not be able to purchase a secret which would add to the serviceability of their already celebrated wares? It is only good cast steel, worked with as few heatings as possible, that is the best material for drills. * * * The great point in making fine drills is not to burn the steel. Steel or iron, when very thin or fine, has a provoking tendency to burn; consequently, in tempering any small steel article this tendency must be particularly guarded against. In no place is it more apparent than in fine drill making. * * * Many watchmakers have a partiality for stubs broaches for making drills. Such selection seems to be quite unjustifiable, as we have never found drills made from them any more serviceable than those made from other good steel. Quite as satisfactory results can be had from using good sewing needles. The best practice is to obtain a paper of good needles (the finish is about as good a criterion as any), and when a paper of good ones is obtained, take care that they are not wasted. The best size is about No. 3 or 4 sharps." Instructions then follow for the making and tempering of such drills. If you have a copy of the book referred to, we would suggest that you carefully read the portion on drilling, etc., but if you have not a copy, and desire one, it will be sent postpaid from this office on receipt of price, 50 cents. In addition to the chapters on pivots and pivoting, there are others devoted to engraving on wood and metal, and useful formulæ for the workshop.

"High Price."—What is the cost of one pound of watch hairsprings? I have seen this somewhere, but have lost sight of it.—The item you have seen is probably the one used quite extensively by some jewelers in their advertising booklets, etc. As a rule, it reads about as follows: The hairspring is a strip of the finest steel, about 9½ inches long and 1/16 of an inch wide, coiled up in spiral form, and is finely tempered. The value of these springs when finished and placed in a watch is enormous, in proportion to the material of which they are made. A comparison will tend to illustrate this fact: A ton of gold is worth \$602,799.21; of steel, when made up into hairsprings and put in watches, \$7,567,000.00—more than twelve times the value of pure gold. Of course, being the price per ton, as given above, the price per pound can be arrived at very readily. Another item, generally used in connection with the above on hairsprings, is as follows: There are more than 2000 distinct operations in the manufacture of a watch. Some of the screws used are so small that at first glance they are easily mistaken for a speck of dirt. It takes 308,000 of these screws to make a pound, which is worth about \$1500.00. Such items as the above, if judiciously used, will probably enhance the value of a watchmaker's advertising matter.

SOUVENIR SPOONS

What are you going to do in this line the coming season?



With some the season is already there. Now is the time to decide. We make a good selling line, and will send you our Spoon Book on application. It tells all about them.

Just look at the cut of our **All-American Spoon**. There is not a spoon on the market to compare with it.

If they are playing **GOLF** in your neighborhood you want our renowned **Golf Hat Pin**. It sells itself.

CODDING & HEILBORN Co.

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Workshop Notes

Subscribers wishing inquiries answered in this department must send name and address—not for publication, but as an evidence of good faith. No attention will be paid to anonymous communications. Questions will be answered in the order in which they are received.

An INDEX to the questions answered in Workshop Notes department for each year accompanies each December number. Subscribers are requested to preserve these indexes, and, before mailing questions, to refer to them, as similar questions may have been answered in previous issues. The indexes are arranged alphabetically, according to subject covered in each answer, and tell the issue and page on which the information may be found.

"Sand Blast."—We would thank you to give us some means and ways whereby we can arrange a satisfactory sand-blast system?—While the sand-blast is better adapted to working on glass or other brittle substances, still many beautiful effects can be produced on metal, particularly watch cases and jewelry. The "mat" or "frosting" by sand-blast is finer in the grain than that obtained by various processes of satin-finish and frosting such as we see on watch plates, produced by revolving brushes, as can be illustrated by examining American gilt movements. It requires but a low magnifying power to show the pits in the plates and bridges produced by the wire brushes as they revolve in a power lathe. On inspecting the dull surface or mat produced by sand-blast, it will be found to be much finer in its grain; that is, the little pits or indentations in the metal are very much smaller and still more irregular than those on watch plates. The process of sand-blast is extremely simple. The great barrier to its more general use is the difficulty of getting a blast of air of constant power and sufficient force to properly project the sand with the force necessary to have each grain produce a dent in the metal, and thus give the desired mat. The pressure of air for sand-blast purposes should be from one to twelve pounds per square inch. It would be very difficult to obtain force enough for sand-blast from a rotary blower, unless steam or other power was employed. The usual form of machine for sand-blasting for jewelers' work is shown at Fig. 3, where *A* represents a cubical box

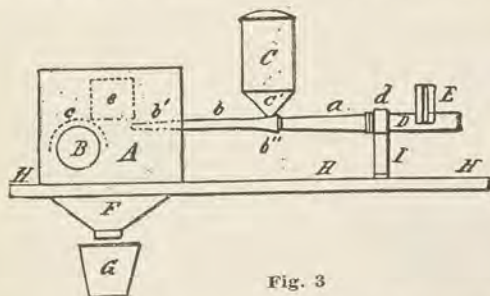


Fig. 3

of wood about eighteen or twenty inches square. The sand is placed in the cylindrical hopper *C*, which has a funnel-shaped bottom that opens into the air-pipes *a b*. The cylinder *C* is about eight inches in diameter and twelve inches long, and filled with rather coarse sand, such as plasterers call "sharp" sand. It is easy to decide on the proper kind if we consider what we desire to do with it—that is, make clean, well-defined indentations in the metal. The iron air-pipe shown at *D* is about one inch in outside diameter, with an up-and-down "shut-off" gate worked by a lever, as shown at *E*. The pipe *a* is coupled to *D* at *d*, and tapers down to about three-fourths of an inch where it enters the pipe *b*, which is enlarged, as shown at *b'*. A hole from the funnel *C* enters the enlarged part *b'* of the pipe *b*. The dotted outline at *b'* represents the end of the pipe, from which the sand is projected by the air-blast. The interior diameter of *b'* is about one-half an inch. Any object to be acted upon is simply held by the fingers, introducing the hand at the hole *B*. Sometimes a curtain is attached to the box *A* at the dotted arc *c*, to prevent an occasional grain of sand from being thrown out of the hole shown at *B*. We can now imagine the particles of sand being blown against any article held in the proper position after being introduced at the hole *B*. The point at which the sand acts with greatest energy is readily determined by the sense of feeling, although windows are sometimes so placed (shown at the dotted lines *e*) as to afford a view of the interior; but if these holes are glazed, they soon become frosted by the sand. There is really no necessity

for sight being employed, except when the job is withdrawn. The sand, after its effect is spent, falls into the vessel *G*, and is then returned to the cylinder *C*. It is necessary to protect the portions of the metallic surface which we do not wish the sand to attack. For such protection nothing equals India rubber, and where there are a number of articles to be frosted, one properly-shaped rubber jacket can be employed for a great number of pieces. The protection used can be much slighter than one would suppose, and still be ample to preserve the polished metal surface intact. Thin paper gummed on, answers the purpose perfectly. It is, of course, understood that the paper can be cut to any desired form. When employing paper, the gum must be applied with clean edges, as any smear of it might more or less impede the action of the sand and a ragged outline be produced. Good glue or gelatin can be employed as a protection by adding a very little glycerine, or, what is better, New Orleans molasses, to a very thick preparation of white glue. The metal surface should be heated, so that the glue will flow readily upon it. In some instances it may be necessary to allow the glue to dry a little. Some glue will peel from the metal while under the action of the sand, but if the right kind is obtained, it makes nearly as good a protection as rubber. Good judgment and a study of what we desire to do and what we have to do it with, in conjunction with a few experiments, will soon set a person right. Where most people fail in working the sand-blast is through a lack of sufficient force to the blower.

"Mining."—Will you please tell me how gold is washed from sand and gravel?—The operation you inquire about is that known as placer mining, the most primitive form of which consisted of filling an ordinary pan with "pay dirt" (that is, the dirt containing the gold), stirring it about slowly and very carefully, and pouring water on the mass while so doing, in order to wash away the lighter dirt and let the gold sink to the bottom, which it readily does on account of its greater weight. This plan is necessarily a tedious one, and is not much in use at the present time, except in such places as are newly discovered, and where the essentials of other operations have not been introduced. In rich districts, however, the plan is profitable; one pan in the Yukon is recorded as having furnished \$1000 worth of dust at a single washing. Placer mining has been made much more lucrative by the introduction of what is known among miners as the "Long Tom," which is an improvement on yet another device called a "cradle" or rocker. The Long Tom may be briefly described as a cradle with a hopper at one end having a perforated bottom, standing over an inclined canvas stretcher. The pay dirt or gravel is thrown into the hopper, water is poured over it and then the cradle is rocked. By the process of rocking the fine gold and sand is washed through the holes in the hopper and falls onto the canvas; the gold sticks fast to the canvas and the sand rolls away. The hydraulic method of mining now extensively used in the West may be said to be an up-to-date adaptation of placer mining.

(2) What is the wet process of assaying gold?—Read our reply to "Chloride," page 600, June, 1901, issue of THE KEYSTONE.

"Ruby."—Can you suggest a remedy for ruby pin jumping out of the fork?—The jewel (ruby) pin, if the watch is in proper order, can no more jump or get out of the fork than the movement jump out of the case. With the "table roller" the guard pin in the end of the lever will strike the table before the tooth is unlocked from the engaged pallet. This will be better understood by inspecting Fig. 1,

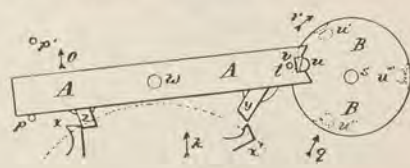


Fig. 1

where we show an enlarged view of a lever and roller, in which the roller is moving in the direction of the arrow *r*. It will be seen that if we move the

lever *A* toward the roller *B* the guard pin *t* will strike the roller *B*, and do it before the tooth *x* is unlocked from the pallet stone *z*. In the practical construction of the lever escapement of the ordinary grades it is the usual practice to allow the locking face of the pallet to act for $1\frac{1}{2}^\circ$. To ensure freedom of motion to the roller as regards contact with the guard pin it is set so the lever *A* can be moved through 1° of angular motion, and the escape wheel tooth which is engaged with a pallet cannot unlock. There is a further factor to be considered in this problem, which is the "draw" of the locking face of the pallet stone. This draw of the pallet stones keeps the guard pin drawn away from the roller, and it is one of the special points to be looked to in examining a lever escapement to determine if the "draw" of both the pallet stones is as it should be. To make this examination wind the watch two or three turns to get power on the train, then put a tinsel friction spring under the balance rim and turn in the banking screws so the jewel pin will just pass free out of the fork on each side—we mean when the lever rests alternately on each banking pin. Now, after the jewel pin is well out of the fork try the guard pin to see if it is just free of the roller, and also, if after you have pressed the guard pin lightly against the roller with a hair broach or an oiling tool, the action of the draw of the tooth will bring the lever promptly back to the banking pin. The engaged tooth, say *x*, Fig. 1, must not pass off of the locking face so as to rest on the impulse face of the pallet *z*, except when the jewel pin is in the slot of the fork. This sort of examination should be applied to both banking pins. If these instructions are carried out there can be no such thing as the jewel pin getting out of the fork except the trouble exists which is illustrated at Fig. 2, said view showing the same parts as



Fig. 2

Fig. 1, seen in the direction of the arrow *k*. The trouble to which we refer is, that the parts are so badly set, and the end shake so much that the jewel pin passes over the fork as shown at the dotted outline *A'*. A frequent cause of over-banking, or getting out of the fork as you put it, the roller being out of true either from faulty construction or a staff badly pivoted so it was not true. We have seen many instances where the guard pin showed the proper side shake when the jewel pin was in the vicinity of the fork, but if the balance was turned through half a revolution, so the part of the roller opposite *g*, Fig. 1, was at the guard pin, the roller was sufficiently out of round to permit the guard pin to pass and throw the jewel pin out of the fork. The mode of testing for such faulty condition is, while the tinsel friction spring is under the rim of the balance turn the balance half a revolution each way from the point of rest in the slot of the fork, and try the safety action of the guard pin each way for every 10° of roller movement. If, under such trials, the guard pin has only a slight side motion and returns promptly to the banking after the guard pin has touched the roller, there will be no danger of the guard pin getting out of the fork.

"Extracting."—Please give formula for extracting the gold from chloride of gold.—There are several methods that may be utilized to achieve the desired result. Among the best for the ordinary workman, that of using sulphate of iron is probably as easily carried out as any. This plan is as follows: First, dissolve the chloride of gold in water, then make up a saturated solution of sulphate of iron of like quantity, heat the two solutions, and add the sulphate solution to that containing the chloride of gold. The gold will be precipitated as a brown-black powder, which can be fused into the metallic state with the aid of sal tartar as a flux. The gold thus formed will be found to be almost pure—that is, about .999 fine.

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Letters from the Trade

Our readers are requested to send us for publication any new ideas they may have on any subject, technical or mercantile, of general interest and practical value to the trade

As to Railroad Watches

ED. KEYSTONE:—Being a watchmaker of 22 years' experience, and having made the business a study of almost a life time, I would like to ask through the columns of THE KEYSTONE what benefit is derived from a watch being jeweled at both ends of the barrel arbor? To my mind it is a detriment to a watch in most respects. I have had within the past year three movements of one make, which is supposed to be a leading railroad watch, where the pillar plate jewel was not firmly set and naturally got loose, the barrel assuming an up and down movement, rubbing against the other wheels. It seems as if the proper place for jewels would be in the barrel, not in pillar plate and barrel bridge; there is no wear on those parts of the arbor worth mentioning, as the arbor does not move except when winding. It is evident then that it is a detriment to the watch, and owing to the trouble and dissatisfaction entailed in its repair is a nuisance to the jeweler. Again, if a spring breaks it is liable to break one or both of the jewels. I do not nor cannot, therefore, recommend a twenty-three-jeweled watch to any one of the railroad men. To me, at least, the extra jewel seems to be superfluous. I know of several old fifteen-jewel adjusted watches that have seen over twenty-three years of service on the road, and that can be relied on more than the new twenty-three-jeweled article. In order to set these jewels firmly the remedy I resorted to was to turn out a seat in the plate and put over the bevel edge of the jewel a ring turned out to fit and screw down with three screws; this made a good, substantial job. I am working for a watch inspector a number of years, but I scarcely ever dare to recommend a twenty-three-jeweled movement for the reason mentioned above. Moreover, I wish to be honest with my patrons and to maintain my reputation as a first-class workman.

Will some of my fellow craftsmen take the matter up? We may then get better satisfaction.

Yours truly,

Burt, Iowa.

FRED. WEHLER.

Passe-Partout Framing

ED. KEYSTONE:—In a jewelry and stationery store in a neighboring town I recently noticed for sale a number of pictures with passe-partout framing, and learned that all the work was done by members of the jeweler's family. Could THE KEYSTONE tell me how I would set about making these pictures?

E. C.

Passe-partout work is now familiar to most people. The necessary tools are a good glass cutter, ruler, T-square, bottle of good liquid glue, a sharp-pointed steel eraser and a pair of scissors.

Every picture framed should have a cardboard backing, unless the picture is mounted on such heavy card that the addition of backing would make it too bulky. As it is necessary to glue the tapes that hold the brass hanging rings to the back of the picture, if one cannot get the patent fasteners, backing should never be omitted. The picture, if unmounted, should be glued to the backboard only at two corners, so there will be no danger of "gathering."

To mark the mat for cutting will require some mathematical precision in order that it may be cut

exactly in the right place. Be careful not to make pencil marks where they will be seen.

The mat must be well beveled in cutting, as it is hard to repair a poor cut. The piece to be cut out being marked, place the mat on a smooth board or thick cardboard, hold the sharp-pointed eraser firmly, in a perpendicular position, then slant the handle at an angle of about twenty-five degrees, and press hard on the knife as you draw it quickly down the pencil line. Do not try to use a ruler to guide your mat cutting, as it is almost sure to slip—a straight, free-hand motion is easy to cultivate.

The glass, mat and backboard should be exactly of a size in order to frame well. Place them carefully together before attempting to put the binding on. The binding must always be glued to the glass side first, the other edge pulled smoothly over the edges of the glass, mat and back, and neatly glued to the back. Corners of the binding may be either ended off square or cut slantwise.

As to binding, there are many materials that can be used to advantage, as the framer will discover for himself. The regular passe-partout paper, which comes in little rolls already cut and its back gummed, is the most convenient. Book-cloth used for binding is extremely effective. A word about cutting it: do not try to cut it with scissors. With the aid of a ruler, mark a straight line on the back where it should be cut, and then with your sharp eraser cut the strips free-hand, or with the aid of a ruler if you find that method easier. There are also other materials which from time to time prove available—silks, wood-paper, etc. After the binding is dry, paste a smooth piece of brown paper over the back of the whole, the finish of any wooden-framed picture. Your work may be so neat that this last touch will not be needed. In most cases, however, it is needed to cover the attachment of the brass hanging rings.

Mat board and backing may be purchased of any picture dealer, or in quantities from wholesale dealers in the cities. Glass may be purchased in large sheets from a glazier and cut to size needed, even the small two-by-four-inch pieces often proving available for either tiny passe-partout or envelope frames. Passe-partout binding is sold by all stationers; pieces of book-cloth by binders; and various other materials will suggest themselves to any one who becomes interested in the work. Brass rings may be purchased at fancy, toy or stationery stores, and narrow tape used to glue them fast (if patent picture rings are not procurable).

As to Non-Magnetic Watches

ED. KEYSTONE:—I would like to see a monthly discussion as to the possibility of a perfect non-magnetic watch. This class of time-piece has attained a position of importance that would make the views of horological experts on the matter interesting.

A. C. PARNO.

Greene, Iowa.

THE KEYSTONE will gladly print communications on the above subject from any of our readers who may consider their views of interest to their brother jewelers.

Photographing Window Displays

ED. KEYSTONE:—As I would like to photograph some window displays, I would ask you to state in your journal how to take the pictures without having them marred by reflections of the opposite side of the street?

Woodbine, Iowa.

L. B. HOVER.

If there is a broad street before your window, or an open space, it will be almost impossible to take a picture by day; for, plant your camera where you will, it is always darker in your window than it is outside, and the opposite condition should prevail. But you can get it at night. See that your electric lights, while flooding the window, are themselves hidden from the street. If you have a good lens from twenty to thirty seconds' exposure will be enough. A lens not specially rapid will require more time. The size of the diaphragm also counts. The smaller the diaphragm, the more

time is required; but the small diaphragm also gives an additional sharpness to your picture. And then, people can walk between the camera and the window without injuring the picture—provided they don't stop short. The time required is also influenced by the rapidity and make of the plate. Therefore you have three things to consider in timing your picture—lens, plate and diaphragm.

A good time to photograph a window is early morning, on a clear day, just before sunrise. The light is strong and penetrating, and a good picture will usually result. Remember that the interior of your window must be light. If your window is darker than the street the glass acts as a mirror, reflecting everything on the opposite side of the street. If the sun shines on your window, and the opposite side of the street is dark, there will be no reflections of foreign objects in your picture.

By keeping these important items of information in mind any country photographer can get a good picture of a show window. If the photographer doesn't know them, it would be well to call his attention to these facts. He may not have had experience in "shooting" show windows.

Souvenir Spoon Window Display

ED. KEYSTONE:—In regard to the gigantic spoon which was the feature of our special window display some time ago, we would say that the spoon was made of wood, and it was five feet in length. The pictures in the bowl and on the handle were hand-painted in oil. The handle was finished in aluminum and the bowl in gilt bronze. After the reunion was concluded the spoon was sold to the mayor for \$60, and presented to Col. Brodie, of New York City, one of the distinguished visitors at the reunion. It proved an excellent advertising scheme, and was instrumental in selling a great number of souvenir spoons.

Very truly yours,

Oklahoma City, Okla.

BOASEN BROS.

Very Curious Clocks

Some interesting reproductions of old French clocks have been lately attempted with success. One is in the shape of a fan, with a different hour at the top of each compartment. The fan gradually unfolds as the hours proceed. Another is in an Empire design, with three little waterfalls—made of crystals which pass down a glass tube—which fall into a little glass troughful of real water and inhabited by a solitary live goldfish. Yet a third clock is in the shape of a bronze sunflower placed in a crystal vase. The center of the sunflower forms the dial, and the course of the hours is marked by a ladybird which slowly makes its way from hour to hour. Another invention is the tortoise clock. This was designed by M. de Serriere for Louis XIV. The works are encased in a tortoise-shell box. The dial, made of pewter, is placed on the top of the box, and is sufficiently concave to allow of its being filled with water. In this basin is placed a magnetic tortoise, beautifully imitated in cork, and it floats unfailingly towards the hour, however often it is detached.

The Keystone Appreciated

ROCKWOOD, TENN.

ED. KEYSTONE:—Yesterday I placed all my KEYSTONES together in their order and intended sending you check this A. M. I would rather do without all of my other reading matter than THE KEYSTONE. Here is my check for one dollar. Let me have THE KEYSTONE every month.

Yours,

J. M. MOSIER.

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Janus, the Two-Faced

BY JOHN TWEEZER

Our most intimate college-day enemy, the Greek, in his poetical pagan religion of mythology, presented the month of January in the guise of a two-faced god. It was a peculiarly happy conception in portrayal. The one face, old and grave and austere, lined with the sorrows of sad experience and thoughtful in reflection over the teachings of the past, looked backward over the dead months which lay in the tomb of eternity; the other face, youthful and joyous, radiant with hope, looked forward to the promises of the future. And to me the most significant feature in the Greek conception of January is that the god Janus was not two-headed, but only two-faced: the same brain lay between and above the backward-looking face which viewed the past and the forward-looking face which fronted the future. The observations of experience passed into the intellectual and moral alembic to be resolved into inspirations for new effort.

January, as "the beginning-time of good conduct and wise resolves," would lose much of its potency if furnished only with the forward-looking face. The experience of one's past is the unerring guide to one's future. Men "mount on their dead selves to higher things." He advances most surely and most safely who applies his observations and experiences in picking out the footing-places of his progressive steps.

January First is significant only to those who are zealously bent on self-improvement. To such, the day is a mile-stone on the path of progress. To the indifferent and unambitious man it is only one day of the three hundred and sixty-five; but he is an unimaginative fellow, generally, or cynical, or "unwrought by faith." He sees no intrinsic value in a day merely because it happens to head the calendar. But the apples of Hesperides are not for such as never look over the garden-wall of sentiment. Be not ashamed of sentiment, those of you who indulge in it: be glad that you have imagination, those of you who can; for therein bloom all the flowers of life, and the best of its fruit there ripens. And to such, January First brings its annual opportunity for self-measurement, and helpful regret for wasted opportunity, and hopeful resolve, and high enlightenment.

It is the time for taking inventory of one's own mental and moral stock; for accurately determining the value of one's past experiments in business and theories of trade; for discovering the extent of one's capital of technical knowledge; for studying the balance-sheet of one's business ability. It is a time for comparing one's gains of experience

with the same day a year ago; for noting the reason-why of past disappointments and the poor working-out of promising prospects; for self-criticism of one's store methods, and analysis of one's deficiencies; for deliberate and un pitying dissection of one's vanities and self-opinion.

Then, when this old, backward-looking face has thus observed thoughtfully of its past experiences, and the brain has projected its conclusions into the fresh, clear eyes of the front-looking face of our personal Janus, how those eyes should light with resolve and heroic determination! They should look out hopefully and reliantly; brighten with zeal, and sparkle with "delight of battle with our peers." They should see visions of a broader horizon than meets the eye of the old face behind; should catch glimpses of better ideas in trade, and surer skill in craft, and finer wit in advertising, and wiser ways in management. Undimmed by sad memories of past shortcomings, they should look without forebodings on the "fresh fields and pastures new" which fill the prospect before them.

Greeting, and thrice welcome, Janus the Two-Faced, for all thy treasure of memory and all thy treasure of hope!

"With This Ring I Thee Wed"

No other article ever fashioned by man embodies so much sentiment as the Wedding Ring. The plain hoop of gold may be far outshone in splendor by a contiguous ring set with priceless gems, and decorated with cunning art; but none approaches it in significance of meaning and fullness of potentialities.

Just as the Engagement Ring precedes the giving of the Wedding Ring, so the history of the former dates from an earlier time. Tertullian, who died A. D. 216, tells us that in his time a "finger ring" was sent to the intended bride as a pledge. Later, the Engagement Ring was merged into the Wedding Ring, in the pretty custom of giving the "gimmel," or "gimmal," ring, which consisted of two gem-set hoops, so fastened together by a tiny rivet that they looked as one ring. When an engagement was contracted, the rivet was removed, and one of two separate rings was worn by the prospective groom, the other by his fiancée. At the wedding the ring was brought together into one again, and worn henceforth by the bride. It was a charming fashion of sentiment, the going of which might have been spared for the general gain of aesthetic values in the history of decorative art.

The Wedding Ring dates from the tenth century; the general use of it began only in

the reign of George III. At first, the material of it was iron, from some fancied virtue in that metal for the covenant of marriage, or for some forgotten symbolism in it. The earliest wedding rings of gold were exceedingly ornate, decorated with gems and enamels and adorned with all sorts of symbolical devices; the "plain gold ring" is quite modern. Even Martin Luther, grim old ascetic that he was, personally designed the ring for his marriage with Catherine Boren that was a real work of art and a marvel of complicated detail. It represented the crucifixion of the Savior—a full-length figure on a cross, with scourge, spear, ladder, and other curiously-wrought objects connected with the scene.

It is an interesting fact that the early Jewish law required that the marriage ring be of a certain intrinsic value, and it was submitted to an examination before the ceremony. Still more curious is the fact that the bridegroom was required to purchase the ring out of his own private resources, and not obtain it either on credit or as a gift from a friend.

In the sixteenth century the wedding ring was invariably inscribed with a motto, or "posey," of suitably sentimental character. Some of these were:

All I refuse,
And thee I choose.

A heart content
Can ne'er repent.

God alone
Made us two one.

My heart and I
Until I die.

Not two, but one,
Till life is gone.

Shakespeare refers to these posey-verse rings in several of his comedies.

The choice of a ring, instead of another form of ornament, as the emblem of marriage, was doubtless inspired by the significance of its shape—"without end." One old writer said, "The wedding ring, being round, is a symbol of perfection and eternity; and having neither beginning nor end that we can see, is a proper emblem of that love which begins without notice and ought always to be without end." Some forgotten poet expressed this fitness in the anonymous verse supposed to be spoken to a bride after the wedding:

"And as this round
Is nowhere found
To flaw, nor eke to sever;
So let our love
As endless prove,
And pure as gold forever."

The practical value of the plain form of the wedding ring is in the fact that it need never be removed for repair of a weakened setting.

(Continued on page 75)

Mercantile Fountain Pen

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INVITATIONS. Wedding, Anniversary, Banquet, At Home, Dinner, Reception and Club, in Shaded Old English and other late styles.
CARDS. Calling, Business, Representative.
EMBOSSING. Monograms, Shield Dies, Addresses, Coats-of-Arms, etc., etc.

A complete line of samples, comprising seven three-leaf folders, 7½ x 14 inches, displaying specimens of our engraving and embossing, with price-list accompanying same, quoting a separate itemized price on each sample. Many orders are lost simply because you cannot estimate the price and talk with intelligence regarding this class of work.

Write for information

ESTABLISHED 1865

Wm. Freund & Sons
174-176 State Street, Chicago

BEGIN THE NEW YEAR RIGHT

USE
DENNISON'S

Dennison's
Jewelry Cases,
Silverware Cases,
Paper Boxes,
Mats,
Trays,
and
Jewelers
Findings
of every
Description.



New
Original
and
Artistic
Patterns
and
Perfect
Workmanship
are
Characteristic
of
Dennison's
Jewelers
Supplies.

ESTABLISHED
1844

Dennison Manufacturing Co.

BOSTON · NEW YORK · PHILADELPHIA · CHICAGO · CINCINNATI · ST. LOUIS.

Stationery

Stationery as a Side Line for Jewelers

THE New Year has probably witnessed many innovations, mostly extensions, on the part of enterprising jewelers. Many, no doubt, have arranged for the carrying in stock of a salable line of stationery goods, and we need scarcely say that this is an idea with which we are thoroughly in accord. Stationery is the jeweler's most obvious side line. It is a commodity which, more than any other, harmonizes with a jewelry business. The stock of silver novelties that did not contain silver-mounted inkwells, silver pencil cases and paper knives would, indeed, be very incomplete. Moreover, the great commercial progress of recent years has had a direct and beneficial effect on the stationery trade; more so, perhaps, than on most others. In the larger business centers there was a falling off in the sale of pens, as a consequence of the invention of the type-writer; to the jeweler-stationer, however, this is immaterial, as such a depression is felt only by stationers proper—particularly those who supply the offices of large business concerns.

Universal Letter Writing

It is gratifying to note that the number of those who write letters is rapidly increasing, and this together with the growing tendency amongst young men and women to organize clubs and other social societies, has increased the demand for all kinds of writing materials. It is, therefore, surprising that in the face of such favorable conditions stationery is an indifferently advertised commodity. Here, then, is an opportunity for the discerning jeweler. We regret, however, to notice many instances where the drug-store people are more alive to the conditions. This state of things is all the more incomprehensible seeing that most jewelers are plate engravers, and engraving is one of the most important and certainly the most artistic feature in the stationery business. Stationery goods of a high-class order are especially suitable for jewelers; wedding invitations, announcements of social gatherings and visiting cards are the lines which most commend themselves, and in addition to the actual profit made on them they are invaluable as a store attraction for the better class of customers.

In order to conduct a stationery department successfully, printers' ink and the show window must be utilized to the limit of their possibilities. An attractive line of children's school supplies will be found most useful, in that young folks are a ready and effective means of advertising. At present the craze is for "valentines," and while those of a comic nature will always be popular among a

certain class in the community, people with any degree of refinement will never stoop to the practice of sending anything to their friends which partakes of the nature of a caricature. There is, however, a legitimate desire amongst the better classes to savor their "valentine" greetings with becoming humor, and a line of strictly inoffensive comic cards will meet their requirements.

Sample Jeweler-Stationer's Advertisement

A CORDIAL GREETING

Well written on correct stationery shortens the distance between friends.

No reason why everyone should not use the proper kind. We have it. Hurd's line; it's the best and just as cheap as the other.

Wedding stock, letter and note papers, visiting and invitation cards; everything. New papers, new tints, new shapes. Our engraving is executed by experts, in the latest styles of the art.

Better see a line with all the new things before placing your next order.

The Underwood Company,

Jewelers, 18 E. 11th,
KANSAS CITY, MO.

Visiting Cards for Babies

Visiting cards for babies form a very unique item in a stock of stationery, and, like all articles, they are ever subject to change. Some years ago a baby's mother sent out an announcement of its birth on a card enclosed in an envelope, the flap of which was decorated with the engraving of a safety-pin in gold and silver. But that is very old style. Now the announcement is made in very much more elegant fashion. There is first of all the baby's card, a diminutive oblong affair, engraved in script with the baby's full name, and in the lower left-hand corner the date of its birth. This is attached by a tiny bow of white baby ribbon to the father and mother's card, which is very much larger, and is engraved in the center with the parents' names, the address being in the lower right corner.

Babies have visiting cards, too, nowadays. They are very tiny oblongs, indeed,

engraved in Roman or script. The fashionable baby has its regular day "at home," when it formally receives other babies of its social set who call and who send up their cards in due form.

Visiting cards for children have all the dignity of those used by grown-up folks, the only difference being in the size.

"With This Ring I Thee Wed"

(Continued from page 73)

Not only is the ring in itself symbolical, but also the finger on which it is worn. The right hand indicates authority and power; therefore the ring is placed on the left on account of the *obedience* ("wives, submit yourselves unto your husbands") which is typified thereby. As to the reason for placing it on the third finger, I find three traditions concerning the origin of this practice, and the reader may decide for himself according to his liking, since the doctors disagree; and he may choose from the sentimental, the religious and the practical. Many disputants, following the lengthy argument of Sir Thomas Browne, maintain that the third finger is used for the ring because of an early notion that that particular finger is connected directly with the heart by a special artery; consequently, it receives a stronger and warmer current from the heart than the other fingers; consequently, it is the finger fitted by Nature to receive the testimony of true love. If this be the reason, the practice has at least survived the discovery of the anatomical fallacy.

As against this sentimental explanation, notice the theological: The third finger is the first "vacant finger," the thumb and two first being reserved as symbols of the Trinity. This explanation is rather strongly confirmed from the ancient marriage ritual, according to which the bridegroom first placed the ring on the top of the left-hand thumb with the words, "In the name of the Father," removing it to the forefinger, saying, "and of the Son," then to the middle finger as he said, "and of the Holy Ghost," and finally, as he pronounced the word, "Amen," leaving it on the third finger.

Those who prefer to see a practical reason in the selection of the wedding-ring finger may find it in this explanation: The index, or forefinger, is too unprotected at the joint; the middle and little fingers are extremes, too big and too little; the third is "just right," is least used of any finger, is guarded on either side, and is incapable of being extended alone or by itself. It therefore enjoys comparative immunity from injury, and so is best fitted to "bear the treasure of a true man's love." J. T.

ALEXANDER H. REVELL & CO

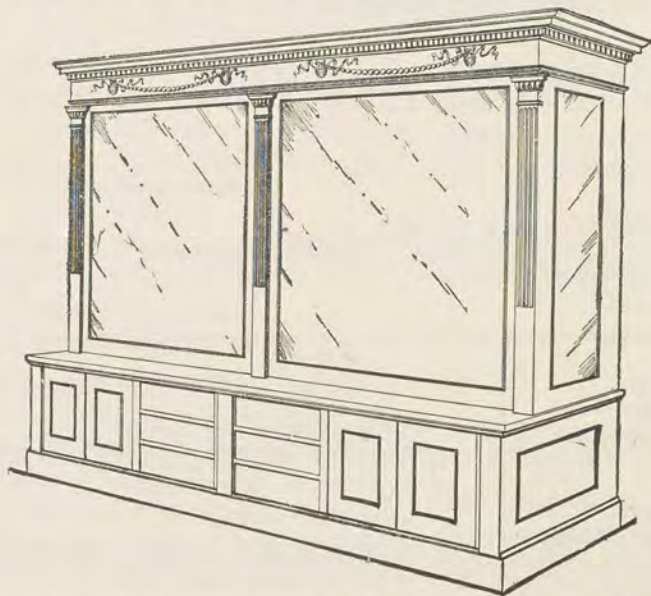
431 to 437 Fifth Ave., CHICAGO.

MANUFACTURERS OF

STRICTLY HIGH-GRADE

Jewelry Fixtures

THIS IS OUR SMALL MOULDING STEEL-LINED SHOW CASE.

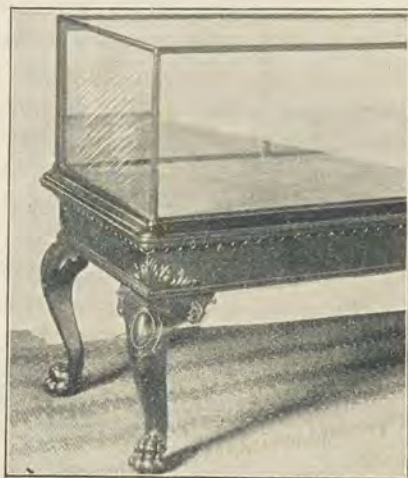


If you contemplate purchasing a jewelry outfit write us, as we may be able to interest you. Or, if you expect to remodel your store, we would be pleased to submit estimate.

We make a specialty of manufacturing strictly high-grade jewelry fixtures of the most modern type in design and construction with latest improvements for electric lighting, if so desired, and ask that you correspond with us if in need of anything in our line. We manufacture an all-glass show case, the latest and best on the market.

For further particulars, please address our factory direct, 431 Fifth Ave.

Write for our No. 11 Catalogue.



WE CHALLENGE THE WORLD TO PRODUCE ITS EQUAL.
Send floor plan with particulars.



No. 2403. BAKING DISH

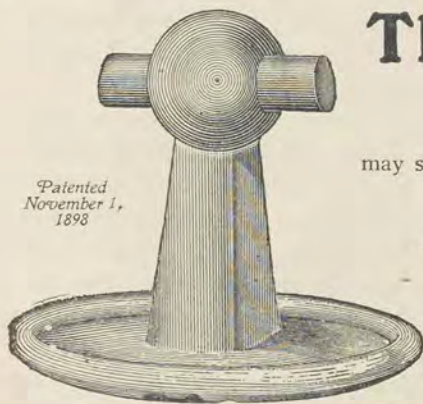
Branch Offices { 46 W. Broadway, New York
220 Sutter St., San Francisco

ROCKFORD SILVER PLATE CO.

Best
Quality
Silverware

"20-YEAR GUARANTEE" with each piece—a strong point with the purchasing public. Orders and correspondence solicited from jewelers only.

ROCKFORD, ILLINOIS



Patented
November 1,
1898

The Sale of a Button

may seem a small matter, but the sale of a good article that will please your customer will bring trade.

The RELIEF Button

is everything that the name suggests—one that will serve for the COLLAR, CUFFS or BACK of TIE.

REID & ORR CO., Makers and Sole Agents

Factory and Main Office, Rochester, Minn.



Partial View of the
St. Louis Watchmaking School, 2308 Locust St., St. Louis, Mo.
Known as the most practical School in the United States

Points About Traveling Men

S. Richard Gross, formerly of Solomon Bros. & Gross, jobbers in silver novelties and jewelry, New York City, has severed his connection with the firm and accepted a position to travel for C. P. Goldsmith & Co., New York, makers of hand-carved rings. He will cover the Eastern and Middle States, and starts out early this month on his initial trip with the new line. As he has had considerable experience, and is a bright, energetic young man of pleasing address, he should be able to keep well up in the procession.

C. W. Edwards will again represent the Charles E. Hancock Company's line of gold jewelry for another year among the Western jobbing trade, with headquarters in Chicago, as usual.

M. F. Barger & Co., of Chicago, announce that they have made arrangements with the following traveling salesmen to represent them during 1902: S. L. Scott, in Iowa and Wisconsin; Ed. O. Baumgarten, in Missouri, Kansas and Nebraska, and S. R. King, in Iowa, Minnesota and Dakota.

Jack Adler, of J. S. Adler & Co., New York, was seen in Chicago just a few days before Christmas, on his way East, after the most successful fall season of his history.

O. H. Hull and Ed. B. Frank will continue to look after the interests of the Pairpoint Company for another year among the Western trade, with headquarters in Chicago.

The Homan Silver Plate Company, Cincinnati, announce that they will have their interests looked after, during 1902, by the following sales force in the territories mentioned: Edward T. Hopkins, in New York and the East; Charles L. Jacobs, in Chicago and the West; Magnus Susman, in New York and the East, and John T. Dalton, in Cincinnati and surrounding country.

Swartzchild & Co., Chicago, will be represented during 1902 by the same force as last year, which includes the following well-known travelers: Eugene Tewels, in the Northwest; Joe Block, in the West, and Ed. G. Swartzchild, in the Middle West and the Southwest.

Charles A. Whiting, of Whiting & Davis, the well-known makers of the "Alice Neilsen" bracelet, was met in Chicago a few days before Christmas, where he was rounding up a most successful year's business. Mr. Whiting says trade never was better with his house than it has been through the year that has just closed.

Edwin M. Drury, with the Non-Retailing Company, Lancaster, Pa., made the National Hotel, Washington, D. C., his headquarters for the fourteenth consecutive year the week before Christmas, for the purpose of accommodating his customers among the retail jewelers of that section. Mrs. Drury joined her husband on this occasion, and it goes without saying that Mr. Drury enjoyed an unusually good trade for the ten days he remained at the nation's capital.

The new wholesale house of Despres, Bridges & Noel, Chicago, will be represented on the road by Emil Despres, Steve Bridges and Max Noel, each of whom is a member of the firm. They plan that during the busy seasons they will alternate with each other on the road and in the house so there will be two members of the firm on the road most of the time, while one will be on guard at headquarters. This firm is a great combination of selling talent, and we predict for them a successful career in the jobbing field.

The Eisenstadt Manufacturing Company, St. Louis, announce that their staff of representatives for 1902 will comprise the following gentlemen in

their respective territories: To begin with, the old veteran, Joel M. Friede, will cover Missouri and Texas; J. Reed Elliott will travel in Nebraska, Colorado, Utah, Montana and New Mexico; Nelson W. Hagnauer, in Illinois and Iowa; Chas. L. Taylor, in Arkansas, Tennessee, Mississippi and Louisiana; Fred. U. Hugunin, in Kansas and the Territories; Chas. J. Cederstrom, in Wisconsin, Minnesota, North and South Dakota. This firm will probably add another one to this list to cover the Southeastern territory.

Monte Gluck, who has been covering Western territory for Otto Young & Co. for over a year past, has gone with C. P. Goldsmith & Co., of New York, and will handle their line in Western and Southern territory for the coming year.



L. R. Millar

L. R. Millar, whose likeness appears herewith, is a bright and promising salesman, who has been a member of the traveling force of J. W. Forsinger, the watch jobber, of Chicago, for over a year. Mr. Millar has traveled mostly in Eastern territory heretofore, but during the coming year he will cover Western

territory for the above firm. He began his career in the jewelry line as an errand boy for Lapp & Flershem, in 1894. Later on he was in their watch department until two years ago, when he went with Mr. Forsinger.

The Seth Thomas Clock Company, Chicago office, will be represented by the same sales force during the new year as looked after their interests so successfully and faithfully last year, which includes Geo. W. Payson, in the Northwest; A. H. Hurd, in the West, and D. P. Butler, Chicago and nearby towns, and Walter Buckley in their tower clock department.

The Waterbury Clock Company, from their Chicago office, announce that there will be no change in their force of salesmen for 1902, but that the following list of "old reliables" will take care of their interests among the trade: Fred. L. Pettee, in the large cities from the Alleghanies to the Rockies; C. A. Kreich, in Illinois, Iowa and Indiana; T. R. Wall, in Wisconsin, Minnesota and the Dakotas, and Theo. Kearney among the Chicago city trade.

H. F. Hahn & Co., of Chicago, have arranged with the following well-known and able traveling salesmen to visit the trade in their interests during 1902: James D. Packard, Will. A. Schlossman, Ed. B. Hoffman, Max Gluck and Carlton Dominick. These gentlemen expect to be on the road with their new spring lines early in the new year.

Morris H. Shiman, who handles the Potter & Buffinton line among the Western jobbing trade, left Chicago right after Christmas for the East, feeling mighty good over the biggest December business in his history.

One of the most interesting men you meet, says a level-headed exchange, is the commercial traveler. He is especially interesting to the person who understands him. He brings a lot more things into your store on his periodical visits than his samples. Better cultivate him more than ever, Mr. Retailer, during the new year.

Wade Williams, the well-known ring salesman who resigned his position with Arnold & Steere, in November, has gone into business for himself under the firm name of Warren & Williams, with

factory at Providence, R. I. The new firm will manufacture a line of gold rings for the jobbing trade, and Mr. Williams will represent them in the Western territory.

Will. S. Manheimer will again cover the Western territory for another year for Louis Manheimer, the Chicago watch jobber.

The C. F. Happel Company, of Chicago, have arranged with the following salesmen to represent them on the road during 1902: Frank Strayer, in Iowa and Nebraska; Arthur H. Goetz, in the Northwest; Will. Terry, in the Far West, and Frank Happel in the Middle West.

The Chicago office of the Julius King Optical Company will be represented during the new year by W. F. Hayes, in the Northwest; F. W. Stewart, in the West and Southwest; George Ridgway, in Michigan and Indiana, and Alex. Larson in Chicago and nearby towns.

Chas. T. Wittstein & Co., Chicago, will be represented by August W. Wittstein in Illinois and Wisconsin territory, and Paul Wittstein will take care of the Chicago city trade for this firm.

Sproehle & Co., of Chicago, will have their interests looked after among the trade during 1902 by James H. Donnelly, in Iowa, Missouri, Kansas and Nebraska territory; A. E. Madsen, in the Dakotas, Minnesota and parts of Wisconsin; P. H. Winterberg, in the Middle West; Joe S. Ritch, in the South and Southwest; John B. Ashton, in the Far West; Frank M. Sproehle, in Illinois and parts of Iowa; Charles L. Caliger, in Iowa and Illinois territory, and A. W. Sproehle in Wisconsin and Minnesota territory.

F. H. Noble & Co., manufacturing jewelers, Chicago, have arranged with Abe L. Reach to look after their interests in the territory from Pittsburgh to the Pacific Ocean, and Will. Juergens in the territory from New York to Pittsburgh. These gentlemen will call on the wholesale trade exclusively.

L. Gutmann & Sons, of Cincinnati, will be represented during the year of 1902 by the following travelers in the territories mentioned: Eli. Gutmann, in the South; Ed. C. Pfaffle, in the Southwest; Steve Luebeshier, in the West and Northwest, and Eugene Fromeyer in the Middle West.

F. A. Hardy & Co., Chicago, have arranged with the following traveling salesmen for 1902: L. W. Melchor, in the larger cities of the Middle West and South; Fred. Dunn, in the West and Northwest; James K. Bass, in the South and nearby Chicago towns, and George Robb, city trade.

Joseph Noterman & Co., Cincinnati, announce that there will be no change in their traveling force for the new year, but that the trade will have the pleasure of greeting the old favorites, William Pflueger and John B. Ostoff, in their interests the same as usual.

Hugh E. King, widely-known in the Western territory as a silverware salesman, has engaged with the Queen City Silver Company of Cincinnati, for 1902, and will have charge of Chicago and the West, with headquarters in the Western metropolis.

The Chicago office of the Towle Manufacturing Company announce the following as their traveling force for the year 1902: George D. Lunt, Pacific Coast territory; Kent H. Clark, in Missouri and Minnesota; W. S. Gilmore, in Illinois, Indiana and Kentucky, and Edward A. Nichols, in Michigan and Ohio.

The Geo. H. Fuller & Son Company will continue to be represented during the new year among the jobbing trade from Boston to San Francisco and from Minneapolis to Dallas by Will. Lamb, who covers more territory and travels more miles than most any other man in the jewelry trade.

Recent Inventions

The following descriptions of recent inventions were specially prepared for our columns by William F. Hall, Patent Attorney, Equitable Building, 1003 F Street, N. W., Washington, D. C.:

685,045.—Granted October 2, 1901, to Charles A. Jacques, of New York City and assigned to Bawo & Dotter, of New York City, relates to an improvement in hammers for clock chimes.

The invention resides in providing a yieldable supporting arm or arm under spring tension having the hammer-carrying stem freely pivoted to the upper end thereof, but limited in its rearward movement. The free end of the stem carries the hammer head, which comprises a striking face and a weighted end overhanging the stem, and in practice the hammer is so supported as to have its head in balance above the hammer support. As shown in Fig. 1 of the accompanying illustrations, the improved hammer is shown in connection with a clock chime. The hammer head is indicated at c^1 , having a striking face c^2 and a weighted end c^3 overhanging the hammer stem c^4 , which is pivoted to the upper end of the flexible arm c . This arm is connected by a cord a^6 to a vibrating arm a^4 , which is actuated by a toothed disk A^6 operated by ordinary clock mechanism. As the arm a^4 is vibrated rearwardly

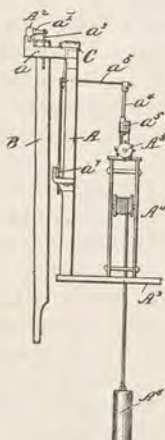
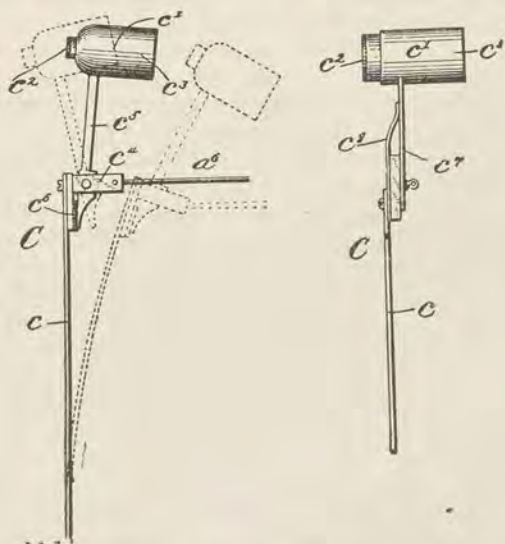
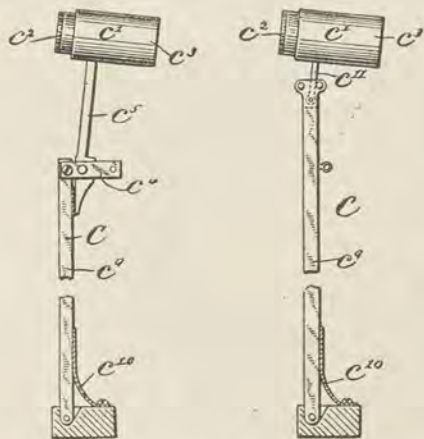


Fig. 1

the arm c is drawn back through the cord a^6 and as soon as the arm a^4 is released from the tooth of the wheel A^6 the spring of the arm c throws the



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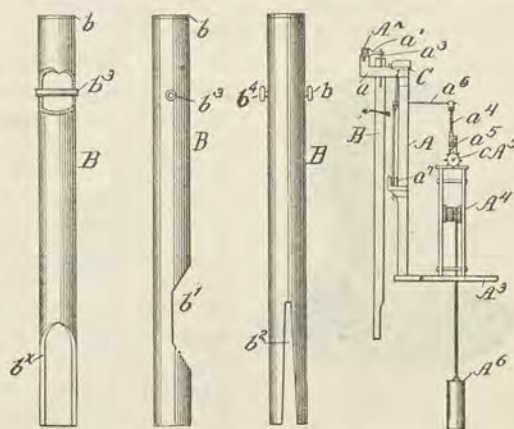


hammer head forward, but the forward movement of the arm c is limited by the cord a^6 . The sudden stopping of the arm causes the head to move

forward on the pivot of its stem and strike the bell. The other figures of the illustrations show modification of the hammer-carrying arm.

686,301.—Granted November 12, 1901, to Charles A. Jacques, of New York City, and assigned to Bawo & Dotter, of New York City, relates to an improvement in tubular bells adapted to be employed in clocks.

In the accompanying illustration the improved bell is shown in connection with the striking mechanism disclosed in patent 685,045, granted to the same inventor. The invention comprises a tubular bell closed at one end to produce a confined air column and having its metal tuned to accord therewith, and having means connected with the walls



of the tube near the closed end thereof by which the tube may be suspended in a manner so as to have its weight beneath its point of suspension, said means not destroying the confined air column. The bells, as illustrated herein, are tubular in form and closed at one end by a cap b , to provide a confined air column. The tuning of the tube is accomplished by cutting away a portion of the same in proximity to its opposite end, or by notching or perforating the same near said end. To suspend the bell and preserve the air column, a tube b^3 is passed through the same near the upper end and the suspension cord is threaded through said tube. The advantage of supporting the bell in this manner is that most of the weight is beneath the point of suspension and the swinging of the bell after being struck is materially lessened.

Avoiding Substitution

The R. L. Griffith & Son Co., Providence, R. I., find that some of the trade are being imposed on by substitutions for the Golconda Gem. The illus-



tration herewith shows the way the genuine Golconda Gem is carded, and the jeweler who keeps this in mind will secure himself against imposition.

"From the superb excellency of The Keystone we do not feel capable of making beneficial suggestions for improvement."—C. M. Bankston, Jeweler, Winona, Mississippi.

The Watch Adjuster's Manual.

"The Watch Adjuster's Manual" is a plain, thoroughly practical, up-to-date American book written for progressive American workmen, by an acknowledged master of the art. Nearly 300 pages of the matter is entirely new, written especially for the "Manual," and has never appeared elsewhere; about eighty pages carefully revised, brought to date and rearranged are from "Excelsior's" well-known standard work, the "Practical Treatise on the Balance Spring" (now out of print), so that practically the whole of the "Manual" is new.

Every available source of information was consulted in its preparation. It contains not only everything of practical importance that has been publically known in the trade to this time, but also a large amount of new information of the highest value, obtained from practical working experts, manufacturers and others likely to know the very latest and best methods in use, besides a considerable share of new and original matter not before known, but new and valuable even to experts in the trade, the results of the author's own studies and experience.

The general subject may be stated as "All about balances and hairsprings," from the raw material to the finest adjustments and rating for perfect time, together with the examination and correction of escapements, demagnetization and other kindred topics. Information on these subjects has hitherto only been obtainable by piecemeal from many different publications, each dealing with some particular part. This is the first and only complete and comprehensive treatise published containing all of these branches fully treated in a single volume.

The subjects of magnetism and the demagnetization of watches, tools, etc., by methods which every watchmaker can follow; non-magnetic springs, balances and watches; the making and adjustment of watch balances; the making of hairsprings, including the modern American methods of making both plain and Breguet springs; the fitting of hairsprings and their properties; how to get the exact time by telegraph; quick, easy and close methods of timing, comparing and regulating springs, watches and chronometers—superior to any before published, and including a method by which any good watchmaker can regulate to one-tenth of a second; how to select and test watch balances; the special and "natural compensations" of the different escapements, and detecting the faults peculiar to each; the different theories of terminal curves and the practical rules for forming them; isochronizing the flat, spiral and Breguet springs—new rules, methods and principles; the adjustment of isochronism, for positions and for heat and cold; and, in fact, nearly every special subject treated in the book is more systematically, practically and fully treated than has ever been done before. For example, take the philosophy of isochronizing the hairspring. No practical and intelligible explanation has ever been given until now, but after reading this, the ordinary workman can understand how and why merely curving a spring without changing its length causes it to gain or lose in the short arcs as compared with the long ones, and what change is required to produce any desired action. He will then comprehend how an isochronous spring corrects errors of rate and secures isochronal vibrations, and can tell by looking at a curve what the effect will be on the rate of the watch. This alone is worth double the cost of the book to any watchmaker.

The foregoing points are named almost at random, and there are many others of equal importance. So great is the number of topics treated that the index to them fills twenty-two closely printed pages in small (brevier) type, and it would be impossible in an ordinary circular to give any adequate idea of all its contents.

The "Manual" is indispensable to every practical workman who desires to be thoroughly well informed in his trade, and to the salesman or retail dealer who wishes to understand about fine watches, and how to buy, handle and sell them.

Mailed postpaid to any address on receipt of price, \$2.50 (10s. 5d.). Send all orders to

THE KEYSTONE,
19th and Brown Sts., Philadelphia, U. S. A.
Sole Agents for the United States. —Adv.

Items of Interest

W. J. Hutson announces that he has moved from Black Rock, Ark., to Helena, Ark., where he will open a jewelry and optical business.

E. E. Critz, of Elyria, Ohio, put in fixtures in time for the holiday trade and now has a neat, pretty store, modern in every particular.

Mason & Co., Vancouver, B. C., had an auction sale last month, which was conducted with customary success by S. Martin, the well-known jewelers' auctioneer.

Park A. Sales, of Cleveland, Ohio, has retired from the jewelry business and has accepted a position as traveling salesman for the Bockley Phillips Co., manufacturers of stock food, Ashland, Ohio.

Jeweler C. H. Savage, Elyria, Ohio, was much disappointed in not being able to get into his new store in time for the holiday season. He now expects to get into his new quarters by February 1st.

The firm of Koch & Dail, of Windsor, N. C., has been bought out by E. Edom Dail, the senior member, and will be conducted by him in future. He has made several architectural changes in the premises and intends increasing the amount of stock.

Ludy & Taylor, of Cedar Rapids, Iowa, can boast of one of the most palatial stores in that State. The fixtures and furnishings are rich and handsome, and the store arrangement is on the very latest approved principles. They report a record-breaking holiday business.

John J. Bowman, of Ezra F. Bowman's Sons, Lancaster, Pa., has returned from a business trip, taking in Maryland, Virginia and West Virginia, looking after the interests of the trade repairing and engraving department of the firm's business. New pupils of the Bowman Technical School are Marie Hurst, Fred. Bowers and Edgar J. Fox.

J. C. Bloom, of Denver, Colo., rejoices in one of the most attractive jewelry and optical establishments in that progressive city. The proprietor is a thorough master of modern merchandising, and appreciates to the full the advertising value of a beautiful store. His trade has been increasing by leaps and bounds, and culminated in an immense holiday business.

Will. H. Wagner, Western man for the Sigler Bros. Company, Cleveland, Ohio, was met in Chicago the day after Christmas on his way home after a most successful fall campaign. As we have remarked before, Will. is past seven, has been around a few blocks in his time and is the real thing when it comes to a traveling salesman. He tells us that his house will likely stay with him the coming year.

The graduates of the St. Louis Watchmaking School during the month of December were: O. C. Stegmaier, Belleville, Ill.; T. J. Burton, Clifton, Tenn.; A. Schmid, Clayton, Mo.; J. T. Rutherford, Moody, Tex.; E. D. Brockett, Itasca, Tex.; David Leach, Caney, Kans.; O. C. Simmons, Basco, Ill.; Albert Simon, Collinsville, Ill.; Edw. Hainz, West Salem, Ill.; Robt. Kleinecke, Cuero, Tex.; O. Halliburton, Kirkwood, Mo.; Ralph Warren, Paducah, Ky.

Ezra F. Bowman's Sons, Lancaster, Pa., have just finished a piece of work for a customer in Winchester, Va., which consists of an oblong silver plate, which is to be fastened to the chair used by the person officiating when the late President (then

major of the U. S. Volunteers) McKinley was initiated into the Masonic lodge at Winchester in 1865. The plate gives some account of the proceedings, or rather refers to the archives, from which the detailed account can be had.

Albert Lorsch & Co., diamond importers, of 37 Maiden Lane, New York, and Providence, R. I., have issued a useful calendar, on the reverse side of which they impart some very interesting and valuable information. A ready means of calculating the cost of diamonds of different weights is set forth in tabulated form, and other features which will commend it to the trade are a list of comparative sizes, together with the fac-simile of a ruler graded on the millimeter standard.

The recent retirement from active service of Henry A. Hinckley, an employee of the E. Howard Clock Company, of Boston, Mass., is significant in that he is a nonagenarian, having been born in May, 1810. Mr. Hinckley has the distinction of figuring in the triple role of soldier, sailor and watchmaker. His seafaring experiences are full of romantic interest. He participated in several conflicts during the Civil War, at the close of which he entered the employ of the Howard Company.

Early on the morning of December 22d the window of Jeweler Marathskay's store, on Warren Street, Poughkeepsie, N. Y., was broken by a burglar, who succeeded in carrying off a considerable quantity of diamonds and jewelry. A trolley car was passing at the time the robbery was about to be committed, but its occupants were deceived as to the intentions of the burglar, who staggered towards the window, apparently under the influence of drink. The loss incurred has been estimated at \$2000.

The "Encyclopedia Americana of Modern Fixtures" is the name of an elaborate catalogue just issued by the M. Winter Lumber Co., the well-known fixture makers, of Sheboygan, Wis. The portion devoted to jewelry-store fittings will be perused with interest by jewelers, as it contains illustrations of some of the establishments equipped by the Winter Company, together with most instructive data and diagrams regarding the judicious apportionment of space in the planning out of jewelry stores.

Many of the friends of Fred. D. Carr, the genial secretary of the Ostby & Barton Company, ring makers, of Providence, will be pleased to learn that he has entirely recovered from the severe attack of diphtheria and subsequent operation for appendicitis. When he was able to leave the hospital, Mr. Carr, accompanied by his wife, went to Old Point Comfort, Va., where he spent several weeks recuperating his health and strength. He returned to Providence by way of New York City, where several days were spent during the holidays in shopping, seeing the sights and visiting friends.

There are no more popular members of the great Western trade than Samuel and Morris Eisenstadt, of the Eisenstadt Manufacturing Co., St. Louis, Mo. This was well evidenced on a recent occasion when an informal banquet was tendered them by a number of their friends, the occasion being the forty-fourth anniversary of their birth, they being twins. At the conclusion of the banquet, the party adjourned to the Standard Theater, where some surprises had been arranged for the gentlemen, one of which was the presentation of a large floral monogram, representing the firm. Mr. Samuel Eisenstadt was called to the stage amid the cheering of the audience, where he bowed recognition of the gift.

Demagnetizing Watches

In these days of abundant electricity, when few places are free from the influence of electro dynamos or motors, it is not surprising that watches containing more or less hardened steel become affected, or, as commonly termed, magnetized. The vicinity of any electrical motor or dynamo is pervaded by what is known as a magnetic "field," and it is this magnetic disturbance that produces in hardened steel the arrangement of its particles similar to those in an ordinary horseshoe magnet. Any piece of hardened steel will become a magnet when subjected to the influence of magnetism, either by contact with a permanent or horseshoe magnet, or by too close approach to a dynamo or motor. Some watches are more susceptible to this influence than others. There are watches on the market, known as non-magnetic, in which the hairspring which is usually the part most easily affected by magnetism, is made of a composition other than steel; so that it is not affected by magnetic influences, and such watches will not be easily magnetized, although the large parts can take on magnetism. In most cases, in a watch that shows irregularity of movement, the trouble is caused by magnetization of the hairspring, the result of this being that the different convolutions of the spring tend to stick together or attract each other, sometimes increasing the speed and in other cases retarding it. The presence of magnetism in a watch can always be determined by using a magnet compass, and in case the hairspring is the only part magnetized, the compass needle will vibrate if placed right over the balance. Sometimes the hairspring being the only part of the watch affected, the compass needle will not show magnetism elsewhere in the watch. Sometimes the larger pieces of steel are magnetized and then the compass needle will be attracted to the watch as a mass, and will point towards the watch if held in its neighborhood.

Every jeweler has had watches that were magnetized, and in many cases the disturbance is so slight that it does not affect the running of the watch, but usually the watch will have an eccentric, irregular movement and should be carefully demagnetized. Jewelers frequently have a watch that will show magnetic disturbance in spite of all that can be done to correct it, and this is doubtless due to the fact that any piece of hardened steel takes on magnetism from the atmosphere, and no amount of electrical agitation will remove it. Such magnetism, commonly called residual magnetism, is not harmful to the watch, as it is natural and will not in any way affect the running of the movement, but it is not at all difficult to remove the magnetism from the hairspring, and if that is cleaned up the watch will, in all probability, run as true as when first made. A reliable demagnetizer that can be sold to the trade at a reasonable price has not heretofore been easy to obtain; but such an instrument made for both alternating and direct current, is now in the hands of jobbers and is sold with all confidence, and no jeweler should do repair work without having a demagnetizer, whether he charges for the work or not. Some jewelers use the demagnetizer like any other tool, in order to put a watch in first-class shape, and make no extra charge, while others make a regular charge for removing "juice" from a watch.

"I consider The Keystone far ahead of any trade publication I have yet seen and would not be without it for twice the cost."—A. P. King, Jeweler, St. Johns, Newfoundland.

The Illinois College of Engraving

begins its Spring term February 1st. Those intending to take up the study of this interesting Art of Engraving would do well to make application at once. It has been our policy since we have been established to accept only a limited number of pupils for the excellent reason that by so doing we can better serve our students.

OUR CORRESPONDENCE COURSE

We have arranged a Correspondence Course in Letter and Monogram Engraving whereby a student can master the art without the necessity of taking attendant instructions. Write for our new art catalogue giving full particulars for our school and its work. Correspondence solicited. Address

Illinois College of Engraving

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KEEP A RECORD OF WATCH REPAIRS

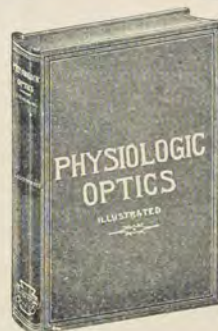
Lack of system in the management of his repair department is one of the great weaknesses of the average jeweler. The first of the year is a good time to reform in this matter. A first essential is a book to record watch repairs.

The Keystone Record Book of Watch Repairs

has space for 1600 entries of repairs, with printed headings properly arranged. It has 120 pages measuring 9 x 11 inches and is bound in cloth, with leather back and corners.

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\$1.00 (4s. 2d.)

The Keystone, 19th & Brown Sts., Philadelphia, Pa.



The One Book That No Optician Can Afford To Be Without

Physiologic Optics

is a translation of the famous French work "Optique Physiologique," by Dr. M. Tscherning, of Paris. It is conceded to be the crowning work on physiologic optics, and will mark a new era in optical study. Its distinguished author is recognized in the world of science as the greatest living authority on this subject, and his book embodies not only his own researches, but those of the several hundred eminent investigators who in the past made the eye their specialty and life study. It is handsomely bound in cloth, and contains 380 pages and 212 illustrations.

Sent postpaid to any part of the world on receipt of
\$3.50 (14s. 7d.)

The Keystone, 19th & Brown Sts., Philadelphia, Pa.

Making Most of The Keystone

It was our privilege in recent months to make personal calls on a large number of subscribers, and to learn from them individually how and to what extent THE KEYSTONE served them in their business. The views elicited were primarily of interest to ourselves, but they are serviceable to point a moral to the trade at large. While all those interviewed seemed to make such use of THE KEYSTONE as well repaid them for the subscription price, not all of them received the full benefit that lay hidden in its pages. Some perused only those pages devoted to their hobbies, neglecting entirely departments of the journal which in modern merchandising would probably benefit them much more materially. We will illustrate our meaning by a case in point, which came to our notice in one of the most prosperous cities of Pennsylvania. This jeweler, who, by the way, had been long established and complained of declining business in recent years, had a fair stock, a good location and an unusually large window. As an old admirer of THE KEYSTONE he extended us a hearty welcome. "Have you anything to suggest," we asked in the course of our conversation, "that would improve THE KEYSTONE or make it more valuable to you?" "I'm scarcely in a position to suggest," he said, "for I have only time to read the technical department—the other pages do not interest me." This remark suggested our next question. "Have you seen," we asked, "the window of Mr. —?" who, by the way, lived less than two blocks away. "I have," he answered. "One of his young men is gifted in that way and arranges the displays. I have no one to do that kind of work and I have not time to try it myself." Mr. — had been telling us ten minutes before how a handy clerk made the displays each month as directed in THE KEYSTONE, and developed much deftness in the art. He was quite enthusiastic as to results, and naturally particularly valued this department of our journal.

The source of Mr. —'s handsome window displays was quite a revelation to this neighboring jeweler, although he received THE KEYSTONE each month! The fact shows the mistake made by many of the craft in devoting practically their entire attention to their particular hobby. A multiplicity of considerations enter into modern merchandising, and no one of these—not even as important a one as the technical end—should be permitted to absorb the jeweler's entire attention. "I have no one to do this kind of work," said this jeweler, when, as a matter of fact, he had two daughters, both of whom, he said, would most readily help if they knew how. He seemed much impressed with our information, and we feel safe in prophesying that he will this year find his window a trade magnet such as he never dreamt of during his many years in business.

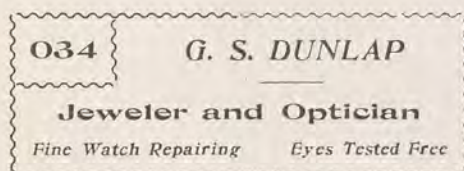
Broaden out, you graduate from the bench. Size up to the more comprehensive title of merchant. If you are not making progress you are falling behind, for this is a world of continuous advancement, and the procession will not wait for the laggard or the star-gazer. You grumble about competition and imaginary foes from without, but your trouble is from within. You have infected

your own business with the germ of decline, and refuse to listen to suggestion as to how to remedy the malady. Study the man around the corner whom you fear so much—it's a thousand to one that *he* studies THE KEYSTONE.

Interesting Trade Doings

A Novel Advertising Scheme

G. S. Dunlap, of Mapleton, Iowa, is a discerning and ambitious jeweler. His advertising schemes are such as are calculated to bring a maximum of results at a minimum of expenditure. This is one of them: A busy night at the barbers means a tedious delay to customers and oftentimes confusion as to who is "next." Mr. Dunlap has adopted a system which obviates all misunderstanding for the barber and advertises Mr. Dunlap's jewelry and optical business very effectively. The method consists in the distribution among the local barbers of a number of cards, one of which is given to each customer according as he enters the barber's shop. The cards being numbered consecutively, no confusion can arise regarding the order in which the customers have entered. This is a fac-simile of one of them:



A Beautiful Window Display

The Rushmer Jewelry Co., of 319 North Main Street, Pueblo, Colo., made an excellent hit with a window display last month. The principal features of the trim were an array of gold chains, sparkling cut-glass, fancy clocks, sterling silver and hollowware, surrounding trays of diamonds and other brilliant gems. A particularly clever achievement of the artist was the construction of a snow-covered arch supported by columns trimmed with holly and smilax. The electrical effects were in three colors, red, green and ordinary blaze. The display was the means of attracting very much attention and was made the subject of prominent report in the local press. It was at night it showed to the greatest advantage, as the effect of the electric light on the sparkling goods and snowy surfaces presented one of the most interesting spectacles ever produced in a show window. A great deal of credit is due to the designer, George T. Zulauf, and to the delicate handiwork of Ray C. Kingsley, who had charge of the electrical arrangements. The Rushmer Co. is to be congratulated on the judgment they display in the selection of window-dressing talent.

Formal Holiday Openings

The store of C. A. Gossard & Co., of Washington, Ohio, was the scene of a pleasant reunion at the beginning of December. It was the annual opening, and the enjoyable programme arranged for the occasion lasted through two evenings. An unusually handsome array of cut glass, jewelry, silverware and statuary was displayed to excellent advantage, and was much admired by the large

assemblage of visitors. The well-arranged store was effectively decorated, but the most novel feature of the proceedings was the presence of a huge bowl of punch, presumably non-intoxicating, with which the delighted guests regaled themselves. The customary distribution of bouquets to the ladies was much appreciated.

An unusually brilliant function was the Christmas opening of Rothstein & Lippman Bros., 1410 Eleventh Avenue, Altoona, Pa. The store was decorated for the occasion with plants, flowers and festoons. An electrical display in the show windows and in front of the store was one of the cleverest features of store decoration ever witnessed in Altoona, and evoked many words of admiration from a large assembly of holiday shoppers. Bouquets were liberally distributed among the ladies, and a full-flavored Havana was given to every gentleman who attended.

An Alleged Diamond Field in Georgia

Quite a sensation was recently caused in Columbus, Ga., and vicinity by the discovery of a valuable diamond in a field adjacent to the city. The owner of the land, on which the discovery was made, was struck by the appearance of the stone, and in order to allay his curiosity brought it to V. J. Pekor, the well-known Columbus jeweler. Mr. Pekor immediately recognized the stone to be a valuable one, and advised the finder to forward it to F. Kunz, diamond expert for Tiffany & Co., New York. The farmer, Hudson by name, acted upon the advice and received the following reply:

In reply to your letter of the 5th inst., we beg to state that we find the crystal you sent us is a real diamond. It is not pure white, but is interesting as a crystal for our collection, and we will give \$80 for it. Shall we send you check or return it? Have you any others found in your region?

Very truly yours,
TIFFANY & Co.

The crystal was of a flat, oblong shape and in an excursion through the locality in which it was discovered, Mr. Pekor and the land owner made a collection of stones somewhat similar in appearance, and intend sending them for inspection. It so happened that the farm was being offered for sale at the time the discovery was made, but the owner subsequently concluded that nothing but an enormous figure would purchase it.

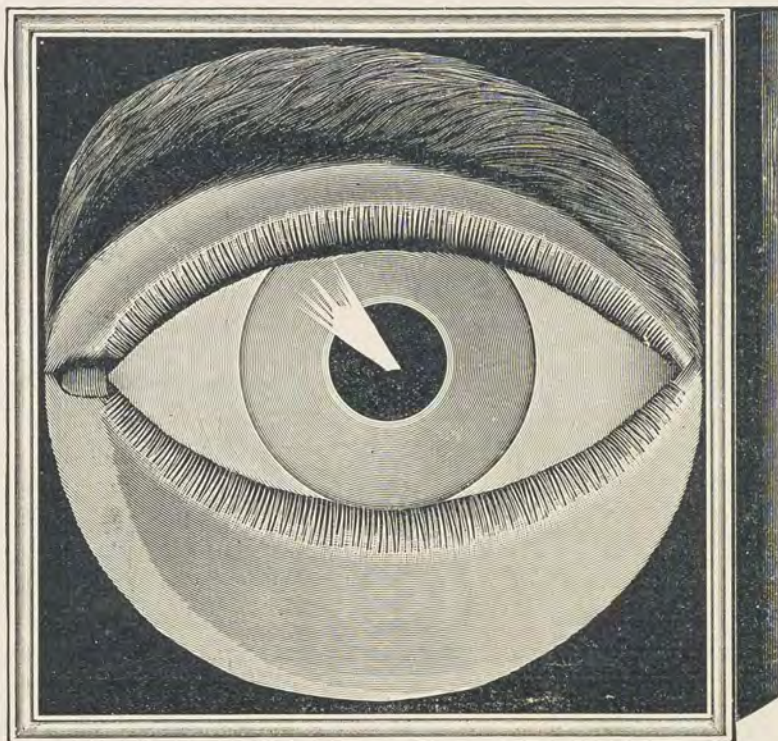
Annual Donations of Clocks

Edwin M. Holman, jeweler and optician, 130 Front Street, Worcester, Mass., is noted for his enterprise and aggressive business methods. It is customary with him to make presentations of clocks to some local societies every year. This year four different donations have been made, the recipients being representative of various sections of the community. Mr. Holman is a clever window man; a display recently gotten up by him entitled "Kilkenny Castle," was voted one of the most unique exhibitions of the window trimmer's art ever seen in Worcester.

"It is impossible for me to suggest anything to improve The Keystone, as it is improving me with its new suggestions with each issue."—E. Town, Jeweler, Easton, Illinois.

Geneva Winking Eye

PATENT APPLIED FOR



Width, 19 inches Height, 19 inches Depth, 7 inches

THIS is the best imitation of the human eye that has ever been placed on the market. Anatomically and mechanically it is perfect. Both lids wink at the same time. It is made to run with either clockwork or electricity, to be used or attached to any 110-volt direct current; motor and all mechanism complete, ready to attach, furnished with each electric sign, free. The lids are made of metal, the eyeball of glass. This enables you to place a light behind the eyeball, so that it gives a brilliant illumination when the lids are open.

Price, complete, \$25.00

We also furnish the Geneva Winking Eye with clock attachment, which will run for 2½ hours, for \$20.00 complete.

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*These instruments are manufactured,
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If more convenient, send to our branches.
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Reviews of Current Ophthalmological Literature of the World

How Do We Measure the Corneal Astigmatism?

A Reply to a Question of a Critic

Several times we have referred to this subject in former issues of THE KEYSTONE and we thought that every reader who was specially interested in it would now know the reason for the notation that has been used by Javal on the arc of his ophthalmometer. That we, however, were sadly mistaken in this assumption is shown by the editor of another optical paper, in which whole pages of each issue are devoted to an elucidation or rather obscuration of the matter. It would take too much of space to refute the argumentation of that gentleman in every point. But we will reply in a few words to the following quotation, as it will allow us to show the cardinal error of his paper. The passage which includes a question to the reviewer of THE KEYSTONE reads as follows:

In Corneal Astigmatism

Suppose in the vertical meridian of an eye the curvature and index are as Tscherning gives them, but that in the horizontal meridian the radius of curvature instead of being 7.98 mm. is 8.98 mm., making a difference of 1 mm. in their radii. Then in the horizontal dioptric action will be as follows:

$$D = C \times r/n = 111.36 \times 377/1377 = 30.49 \text{ D.}$$

But if this action be projected to its center of curvature, as in the case above cited, its value is 42 D. Hence, if we calculate + 47.24 D. as the value of the vertical and + 42 D. as the value of the horizontal, there is astigmatism of $47.24 - 42 = 5.24 \text{ D.}$ But if + 34.31 D. is the dioptric value of the vertical and + 30.49 D. is the value of the horizontal, astigmatism is $34.31 - 30.49 = 3.75 \text{ D.}$ What we contend is that with the curvatures above given and for an index of 1.377, corneal astigmatism is 3.75 D. and not 5.24 D., for inasmuch as the correction of such a condition were made it could not be made at the center of curvature of the cornea, nor indeed at the cornea itself, but must be made a slight distance forward of the cornea. A - 3.75 D. cylinder ax. 180° or a + 3.75 cylinder ax. 90° at the cornea would correct the astigmatism, or a cylinder of slightly reduced value would correct it a little forward of the cornea. The only place at which a 5.24 D. cylinder would correct the eye would be at the center corneal curvature—a position, of course, out of question, for there are really two centers of curvature a millimeter apart. The proper place to correct the error of refraction is somewhat anterior to the cornea, and such corrections, if for corneal astigmatism, must be slightly less than the real difference between the dioptric values of the chief meridians of the cornea at the cornea, not 7.98 mm. nor any number nor fractions of millimeters farther back.

It has been because of this discrepancy that we continued to hold that the dioptric value of the cornea for plane waves or parallel rays in air is its dioptric action at the area surrounding the anterior pole, where the refraction takes place.

He then goes on to state that he would like to know, in determining the dioptric value of different radii of curvature as shown by the reflections from the corneal surface in ophthalmometry, whether the reviewer of THE KEYSTONE "would consider a cornea as above described as having 3.75 D. of astigmatism or 5.24 D., and if the mires of the various ophthalmometers in use are based upon the dioptric value of the cornea at the cornea or upon the values of the different meridians at their centers of curvature. If the question as to what the dioptric value of the cornea is were an abstract problem, its solution would be of no consequence; but as the problem for measuring corneal astigmatism, it is a question of the greatest importance. We insist that the dioptric value of the cornea is what it does—that its action varies for different distances of the object, and it is therefore a variable; but for parallel incident rays its action and value are the same—that is, for the data given by Tscherning, 34.31 D. and not 47.24 D."

The reviewer is glad to answer this question, though he is astonished that a teacher of optics and optometry does not understand the theory of Javal's ophthalmometer, a masterly exposition of which he will find in the translation of Tscherning's "Physiologic Optics." Here (page 52) he will see that Javal takes for the index of refraction of the aqueous humour 1.3375 instead of 1.3365, and that the posterior surface of the cornea is not considered at all. Javal then measures the normal refraction by the reciprocal of the anterior focal distance of the cornea, and it is for this reason that on the arc of the ophthalmometer we find 37.6 D. as belonging to a corneal radius of 8.98 mm. and 42.3 D. as belonging to a radius of 7.98 mm. Javal's instrument, therefore, would give a corneal astigmatism of $42.3 - 37.6 \text{ D.}$ that is of 4.7 D. in the case adduced by our critic.

Of course, now the old question will be raised: Why does Javal take the reciprocal of the anterior focal distance? This question we will now answer and the critic will see that the whole problem may be considered without any reference to the question as to how the refraction of the cornea ought to be expressed.

Suppose we wanted to construct a human emmetropic eye of which was given the crystalline lens at a given distance from retina and cornea and also the position of the corneal apex. What curvature ought to be given to the cornea in order to make the eye emmetropic? Now there can be only one point on the axis towards which rays, parallel in air, must converge after refraction by the cornea in order to be further refracted

by the crystalline to one point at the retina. Let us call the distance of this point from the cornea F_2 , then F_2 would be the second focal distance of an ideal cornea that would make this eye emmetropic. The first focal length of the cornea would then be $\frac{F_2}{n} = F_1$ and the refractive power of this ideal cornea would be expressed by $\frac{1}{F_1}$, if for a moment we accepted the nomenclature of Javal. But suppose we had not this, but another weaker cornea of the refractive power $\frac{1}{C_1}$, where therefore C_1 would be the anterior and $nC_1 = C_2$ the posterior focal distance. This $\frac{1}{C_1}$ would be found by the ophthalmometer. What lens $\frac{1}{f}$ would we have to add to the cornea in order to make the eye emmetropic again? It is clear that this lens of focal distance f in contact with the cornea must have such a power that the parallel rays falling on it are by the cornea refracted to F_2 . For all rays refracted to F_2 are by the crystalline focussed on the retina. Now the parallel rays, striking the lens, fall after refraction by the lens on the cornea converging towards a point f behind the cornea and we must therefore have by corneal refraction: $\frac{C_1}{-f} + \frac{C_2}{F_2} = 1$. But as $C_2 = nC_1$ and $F_2 = nF_1$ we have $\frac{C_1}{-f} + \frac{C_1}{F_1} = 1$, or $\frac{1}{f} = \frac{1}{F_1} - \frac{1}{C_1}$. That is, the refractive power of the needed lens is simply the difference between the dioptric power of the ideal cornea and that of the real cornea. Suppose, now, that in the other main meridian of the cornea we had the greater dioptric power $\frac{1}{K_1}$, and that f_1 was the focal distance of the lens required to make this meridian emmetropic, then we would get also as before $\frac{1}{f_1} = \frac{1}{F_1} - \frac{1}{K_1}$. We would therefore have by subtraction $\frac{1}{f} - \frac{1}{f_1} = \frac{1}{K_1} - \frac{1}{C_1}$. That is, the difference between the two correcting spheres or the cylinder, correcting the corneal astigmatism in contact with the cornea, would be equal to the difference between the dioptric powers of the two main meridians, if with Javal and Tscherning we express the dioptric power of the cornea by the reciprocal of its anterior focal distance. If we do not (as our critic prefers), then we still have to say that the cylinder which corrects the corneal astigmatism in contact with the cornea is in dioptric strength equal to the difference between the reciprocals of the two anterior focal distances of the two main meridians of the cornea.

Our critic now will see that the strength of the correcting cylinder has nothing to do with the mathematical expression for the refracting power of the cornea. But he will observe that if this power is expressed by the reciprocal of the anterior focal distance, then the verbal expression of the whole subject becomes so much easier. Furthermore, we have given reasons why the reciprocal of the

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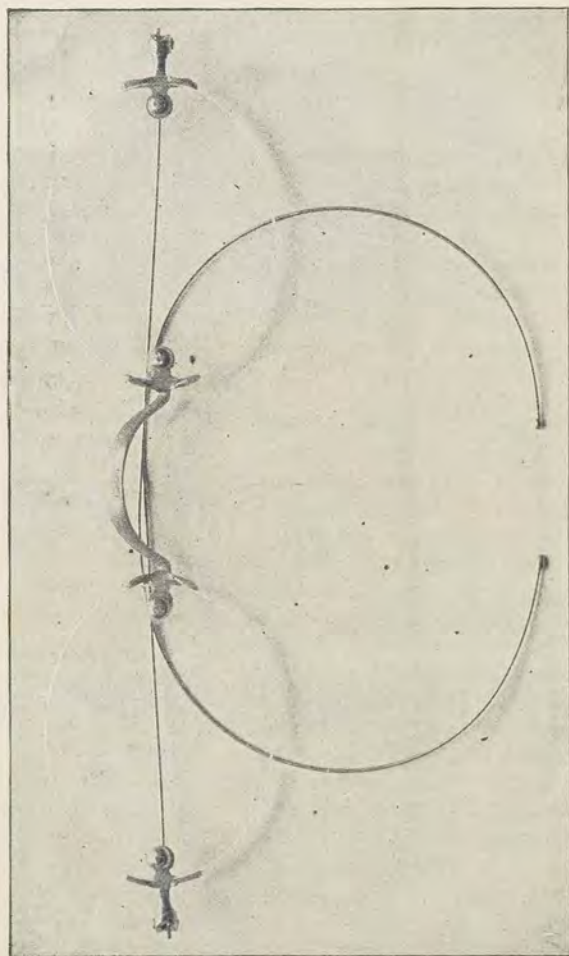
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The glass, in both spectacles and eyeglasses, is secured by our **NEW RIVETING PROCESS**. Neat in appearance and exceptionally strong.

Patented compensating wire temple. Not affected by wear of joint.



Patented Aug. 23, 1887; Nov. 3, 1896; Dec. 1, 1896. Patent applied for.

Mountings are made of fine quality tempered steel, nickel-plated.

Price with smoke, blue or white microquille, "OO" or "O" eye,	\$2.50 per dozen.
" " plano convex lenses, (cheap quality, 1 eye size,)	2.50 " "
" " periscopic convex lenses, "O" or 1 eye size,	3.00 " "



Patented Nov. 3, 1896; Dec. 1, 1896.

The handsomest cheap eyeglass on the market. Either alloy or nickel mounting, and either cork or zylonite offset guards.

Price with smoke, blue or white microquille "OO" or "O" eye,	\$1.75 per dozen.
" " plano convex, (cheap quality, 1 eye size,)	1.75 " "
" " periscopic convex "O" or 1 eye size,	2.25 " "

A Smoke Frameless Riding Bow to retail at 50c.
A BIG SELLER! TRY IT!

For sale by leading dealers all over the United States. If your jobber does not carry these goods, we will send per express, prepaid, on receipt of price. WE OPEN NO RETAIL ACCOUNTS.

Pennsylvania Optical Co., Manufacturing Opticians, **Reading, Pa.**

Reviews of Current Ophthalmological Literature of the World

(Continued from page 83)

anterior focal distance should be regarded as the expression for the dioptric power of a single refracting surface. We can also cite here what Prof. Albrecht Nagel, who is only second to Donders in the exposition of the refraction of the eye, had to say on this subject more than twenty years ago. He states in "Graefe and Saemisch" (Vol. VI., p. 260, 1st ed.): "If we speak of the dioptric power of the eye [cornea] in the same sense as we do of the dioptric power of a lens it can have only the meaning of a comparison. * * * This dioptric power of the eye [cornea] may be put down very approximately equal * * * to a lens of a focal distance which is equal to the anterior focal distance of the eye [cornea] and which must be put at the second nodal point [center] of the eye [cornea]. In the latest schematic eye [cornea] of Helmholtz, for example, the dioptric power of the media [this medium] may be considered equal * * * to a sphere lens of 15.5 mm. [23.14 mm.] focal distance, or a dioptric power of 64.5 D. [43.20 D.] placed at the second nodal point [center] of the eye [cornea]." In this quotation we have added in brackets the words which when put in place of the preceding word will make it apply to the cornea; for that the same reasoning is correct for eye and cornea will be evident if we consider that the cornea may be looked upon as the same compound refracting system as the eye, in which, however, the two principal points have merged into one principal point at the corneal apex, and the two nodal points have merged into one nodal point at the center of the refracting surface.

In conclusion we will correct an important number in the passage of our critic. This gentleman always states that Tscherning had given the refracting power of the cornea equal to 47.24 D. In fact, however, Tscherning (p. 31) gives 40.98 D. as the refracting power of the whole cornea with both surfaces and states (p. 53) that if we neglect the posterior corneal surface the refracting power would be equal to 42.16 D. This would be for $n = 1.3365$. Javal takes $n = 1.3375$ and thus arrives at 42.3 D. as the refracting power of a cornea of 7.98 mm. radius.

We hope that our critic now sees why Tscherning's nomenclature is the better one. At any rate we must close the discussion. *Sapienti sat.!*

Diagnosis, Prognosis and Treatment of Pernicious Myopia

At the last meeting of the Section of Ophthalmology of the British Medical Association Dr. Priestly Smith spoke on the subject of pernicious myopia. He said that in many persons myopia was an innocent condition which without serious consequence continued through many years without much change. In some cases, however, myopia reached a higher and higher degree, was accompanied by damage to the tunics of the eye and sooner or later led to serious im-

pairment or loss of life. The question was, by what means and to what extent could we distinguish between these different forms of myopia in their earlier stages and what could be done to arrest the progress of a pernicious myopia?

The lecturer then explained that there was no positive sharp distinction between the two classes and that any forecast would have to be based on the following six considerations:

1. *Age.* The younger the patient the more likely is the myopia to increase. In a large number of cases it comes to a standstill between the ages of fifteen and twenty-five.

2. *Degree of Myopia.* The higher the myopia the more likely it is to increase. A child who has — 10 D. when he is ten years old is likely to have — 20 D. when he is twenty. But in adults we cannot make a forecast even from a high degree of myopia, unless the actual condition of the choroid and retina is considered.

3. *Condition of Choroid and Retina.* Usually the visual acuity of myopes sinks as the degree of myopia rises. This is caused by pathologic changes in the choroid and retina that are so apt to occur in the higher forms and for which there is no remedy after they once are well developed.

4. *Constitutional Condition of the Patient.* General enfeeblement of health, as after severe illness or in women after prolonged nursing, seriously increases the risk of its progress even after middle life.

5. *Evidence Relating to Heredity.* Hereditary or family myopia, even of high degree, may be of an innocent type, but heredity confers no immunity from pernicious complications.

6. *Occupation.* "The future of many myopic eyes depends on the way in which they are used. Prolonged and habitual close work does harm. We see the effect in overworked school children, clerks, schoolmistresses, literary men, seamstresses, jewelers, typesetters and others. We see it not only in the greater prevalence of complications among such persons, but in individual cases. Excessive close work in early life is often accompanied by rapid increase of refraction; in later life it often aggravates the graver complications. Patients who must, or will, continue such work in excess, especially those whose working distance is already too short and who decline to lengthen it by the aid of glasses, are encouraging their myopia to run a pernicious course. The amount of risk must be estimated from the grade of the myopia, the age of the patient, and the amount of choroidal change already present. To give a bad prognosis by way of warning is sometimes the best or only way to prevent its fulfillment."

With regard to the treatment of pernicious myopia, it may be truly said that one ounce of prevention is worth more than a pound of cure. Priestley Smith well says in conclusion:

I will only repeat one leading principle, namely, to suspect every myopia, and especially every youthful myopia, of a tendency to increase, until time has proved it to be stationary; to be doubly suspicious in presence of congestion or atrophy; and to re-examine at intervals of six months, twelve months, or longer, according to the nature of the case. Only in this way can we decide on the

rational measures of precaution which are needed in each case and which are the essence of treatment. We can do far more important service to our short-sighted patients, if they will let us do it, by helping them to avoid a pernicious development of their disorder, than by any attempt at remedial treatment after the fact.

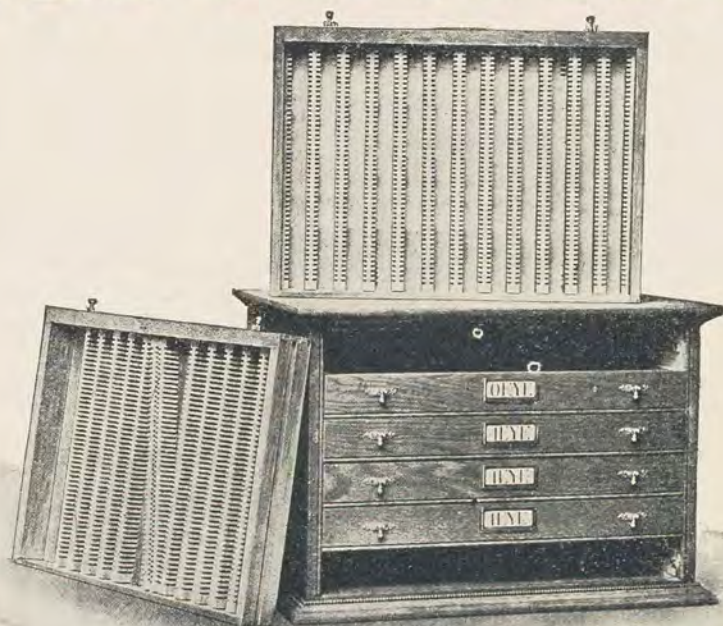
The Hundredth Anniversary of the Discovery of Astigmatism in the Human Eye

It is just one hundred years since the great English philosopher, Thomas Young, published his valuable researches "On the Mechanism of the Eye." In this work, from which even a Helmholtz derived great stimulation, Young mentions that for his eye in order to focus rays of light in the vertical meridian the luminous point had to be at a distance of 304 millimeters (10 English inches), while the light had to be at a distance of 213 mm. (7 inches) in order to enable the eye to focus the rays falling on the eye in the horizontal meridian. The myopic eye of Young then had a far point of 304 mm. for the vertical and one of 213 mm. for the horizontal meridian. In other words, he had an astigmatism of 1.5 dioptries against the rule. The seat of this asymmetry was not in the cornea, for he eliminated the refraction of the cornea by putting it in water and replacing it by a convex lens. Still he observed the same difference of focus for vertical and horizontal rays of light. He therefore justly concluded that in his eye the crystalline lens was the seat of the astigmatism and he believed that it was the oblique position of this body that caused the trouble. He knew already that the defect could be corrected by an oblique position of the correcting lens, and in this connection he mentions in his essay that a Mr. Cary had told him as a fact that many persons had to hold their spectacles obliquely against the eye in order to obtain the best vision.

From these few notes the reader will see at once how far Young was advanced in the understanding of this optical defect. Indeed, it may be said that he was too far advanced for his contemporaries. It was twenty-seven years later when the English astronomer, Airy, described his own case. He was the first to conceive that a cylindrical glass might correct the asymmetry, and he was also the first who actually had a spherocylindrical glass constructed in order to correct his compound myopic astigmatism. But these valuable cylinders did not come into general use at once. It took more than twenty years before their value became generally known. How rare they were even in 1854 can best be illustrated by a passage from the American edition of Lawrence's work "On Diseases of the Eye," which was edited by Dr. J. Hays, of Philadelphia, in 1854. Dr. Hays there states: "We have within the past year seen two cases in which this defect of vision (astigmatism) existed. The subject of the first was a lady, sixteen years of age, who consulted me in consequence of her vision being so defective as to materially interfere with her education. I accompanied her to Mr. McAllister's and found that, with the

(Continued on page 91)

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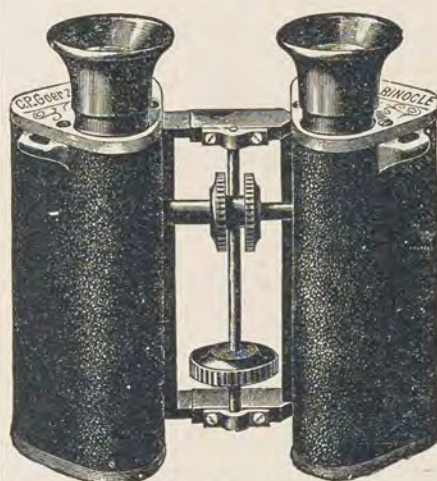
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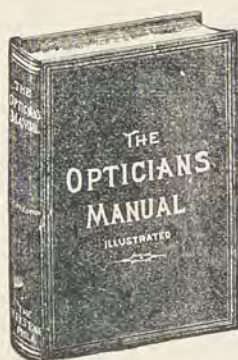
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CHAPTER	IV.—OPTICS.
CHAPTER	V.—LENSES.
CHAPTER	VI.—NUMBERING OF LENSES.
CHAPTER	VII.—THE USE AND VALUE OF GLASSES.
CHAPTER	VIII.—OUTFIT REQUIRED.
CHAPTER	IX.—METHOD OF EXAMINATION.
CHAPTER	X.—PRESBYOPIA.
CHAPTER	XI.—HYPERMETROPIA.
CHAPTER	XII.—MYOPIA.
CHAPTER	XIII.—ASTIGMATISM.



The first ten chapters have been republished in book form with additional matter, illustrations and colored plates, price \$2.00. Chapters XI and XII have also been published in book form under the title "Supplement to the Optician's Manual," price \$1.00. These books will be sent postpaid, to all parts of the world, from this office, on receipt of price. Or can be had from the leading wholesale optical houses of Great Britain, and Bosch, Barthel & Co., Sydney, N. S. W., for 8s. 4d. for the Optician's Manual, and 4s. 2d. for the Supplement.

CHAPTER XIV (Part X)

ANOMALIES OF THE OCULAR MUSCLES

The anomalies of the ocular muscles still continue to furnish a fruitful field for investigation, and the literature upon the subject grows rapidly. And yet with all the knowledge that has been accumulated on this subject, and the various methods that have been devised for the determination of the presence of these anomalies, a feeling of uncertainty or incompleteness impresses the careful student, and it is quite within the range of possibility that further research may very materially change the views that are at present generally accepted.

In the study of the relations of the muscles to each other, sometimes contracted and again relaxed, we enter a field in which the symptoms are uncertain and vague. There are no demonstrable lesions of the muscular or nervous system which would be recognized by certain logical manifestations in life, or which could be discovered on the dissecting table by the knife or microscope of the pathologist. We have to deal rather with the peculiarities of an unbalanced nervous system, showing themselves in *tendencies* to inco-ordination of the ocular muscles. The examination and treatment of every such case is attended with difficulty, and calls for repeated tests by the latest methods of diagnosis.

Muscular anomalies are closely associated with refractive errors, although they may also occur in connection with emmetropia. But in either condition there is no case of muscular trouble that may not be modified or complicated in some way by the action of the ciliary muscle. This relation is universally recognized as so close that some authorities claim that all cases of heterophoria are dependent upon errors of refraction, and that the proper correction of the latter will cause the former to disappear. While others go so far as to maintain that the nervous disturbance caused by muscular imbalance, reacts upon the accommodation and the refraction of the

eye, and that the first step in the management of these cases should be attention to the condition of the muscles.

Functional deviations of the eye are not so simple as they may seem, but are influenced by the individuality of the patient and by his environments. They are not to be considered as dependent upon a weakness of the nervous system, but rather as a cause of this condition; being reflex or symptomatic of troubles elsewhere. A minority of the cases of heterophoria are due to substantial changes and are attended by a train of symptoms of their own.

MUSCULAR EQUILIBRIUM

The movements of the eyeballs in the orbit are under the direction of the brain, which controls them by means of a delicate muscular harness, and a sensitive nervous bridle. The four recti muscles acting in combination *tend* to draw the ball backwards into the orbit, which tendency is neutralized or opposed by the superior and inferior oblique muscles whose action is to draw the eyeball forwards. This backward or forward movement is very slight: practically we may say the movements of the eye are limited to those of rotation. A slight degree of contraction of all the muscles holds the ball taut in the orbit and maintains it in its proper position during our waking hours.

This process is simultaneous in the two eyes, so that when the two eyes are directed towards an object, their axes will meet: this is co-ordination of the eyes with perfect muscular balance, and is governed to a great extent by the natural desire to see the object single. When attention is directed to another object situated at about the same distance, both eyes turn to the right or to the left, or up or down, to an equal extent: these are called the associated movements of the eyes. If the objects looked at are directly in front, but one closer than the other, it is simply a matter of increased convergence, both turning inward to the same extent. While if the two objects are not only at different distances but in different directions, the eyes must make both the associated movement and also that of convergence. It is impossible for one eye to move and the other to remain stationary. This is a wise provision of nature, as otherwise we would be annoyed and vision distressed by a more or less constant diplopia.

The conical shape of the two orbits, the axes of which diverge from the median line, and the natural length of the muscles when passive, favor a position of divergence of the optic axes, and this probably obtains when the eyes are closed in sleep. But when the eyes are opened the parallel position that is required for binocular vision must be maintained, and the driver (the brain) through his reins (the nerves) pulls the eyes from the normal divergence to the equally normal functional condition of parallelism; this is accomplished without any special act of volition on the part of the individual, and being free from exertion may be considered as the position of rest.

This results in normal and comfortable binocular vision, but it does not follow that a muscular imbalance will destroy this condition of parallelism or prevent binocular vision. In the majority of cases an increased inner-

vation is sent to the insufficient muscle in order to maintain the desired positions of the eyes; and thus the nervous supply to the eyes being in excess of the amount to which they are entitled, some other organ is robbed and the general nervous system is bankrupted.

Functional muscular anomalies may be manifest or latent, or at one time assume one form and again the other. There may be an actual deviation of one optic axis from the other, or there may be simply a tendency to deviation. It should be remembered that the corresponding muscles of the two eyes must be considered together, and we do not speak of the defect of a single muscle of either eye. For instance, we recognize insufficiency of the internal recti, and not of the internal rectus of one eye. Nor can we consider the external rectus of one eye as possessing more power than the external rectus of the other, when measured by prisms, but rather that the strength of the external recti is 6°, or 7°, or 8° as the case may be. Therefore, in heterophoria, we have a disturbance of the normal relation that should exist between two sets of opposing muscles, rather than an insufficiency or overaction of any individual muscle.

The causes which tend to disturb the natural muscular equilibrium do not always act with the same force or produce the same result, but they are modified by the individuality of the patient, or by the personal equation, as it is aptly expressed. This is well illustrated in the tendency to convergence of the visual axes that is dependent upon the hypermetropic condition of refraction. In some cases a high degree of defect is unaccompanied with any muscular imbalance, while in other cases a slight hypermetropia is productive of marked muscular disturbance. Everything depends on the nervous susceptibility of the individual; a person of a highly wrought nervous temperament will suffer from a low degree of hypermetropia, while a strong, robust individual will not be disturbed or inconvenienced by even a much greater degree of defect. Outside of this difference in temperament it is possible for a high degree of hypermetropia to exist with a perfect muscular equilibrium, while in other cases it is the cause of a decided strabismus. There is a factor in these cases that is not susceptible of explanation; it is a neurosis, or it occurs in a neurotic individual, that is, one in which there is an exaggeration of the reflex excitability.

NOMENCLATURE AND CLASSIFICATION OF MUSCULAR ANOMALIES

The nomenclature and classification of the muscular anomalies of the eye have been passing through certain stages of evolution. The first classification of any group of diseases has always been based upon the outward appearances presented, without any reference to the underlying cause. For instance not many years ago dropsy figured as a disease and was treated as such. But as knowledge increased it soon became evident that dropsy was merely a symptom, and that the proper procedure was to search for the cause of the dropsy (it might be hepatic, renal or cardiac) and direct the treatment to the removal of that cause, rather than to the dropsy itself. This led to a classification based upon the pathological condition that was found instead of the symptoms presented.

(Continued on page 91)

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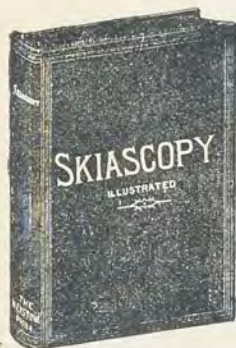
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CHAPTER VII. (Continued)

The Study of the Eye by Skiascopy—Emmetropia and Symmetrical Anisometropia—The Three Primary Cases—Static and Dynamic Appearances

CASE I

Three conditions may produce the effects noted in case 1: (1) Hyperopia, (2) emmetropia, (3) myopia of less than one diopter. Motion with the mirror does not, then, show in this case the absolute condition. But there will be a marked difference in the appearance in the three different conditions, notwithstanding the fact that motion will be the same in all. In hyperopia motion is sluggish, but it is more sluggish in high than in low degrees of hyperopia. In emmetropia motion will not be rapid, but it will be more rapid than in hyperopia. In myopia motion will be more rapid, especially if the myopia amounts to nearly one diopter, for with one diopter of myopia we have case 2. In high degrees of hyperopia the extent of diffusion at area 3 is large, which makes the real reflex large; but magnification is not at its highest, since the emitted pencils are not neutralized, which makes it appear small, and the illumination is weak. The minor pencils that reach the observing eye are small, but focused at area 4. In emmetropia of the observed eye there is less diffusion at area 3 and a brighter reflex. The emergent pencils, which will be neutralized at the cornea of the observed eye, will also be more intense, or provide larger minor pencils—pencils that embrace more action, because they are a larger part of the major emergent pencils. Motion at area 3 is more rapid because the potential image is nearer the retina, although still posterior to it.

But passing the emmetropic and entering the myopic field—myopia of the observed eye—we arrive at more powerful skiascopic phenomena. The image of the luminous area approaches sharp definition at area 3. If the eye is, say $\frac{3}{4}$ D. myopic, and the luminous area is, by way of the mirror, $1\frac{1}{3}$ meters from the observed eye, all the incident pencils of light from the luminous area will focus at area 3, producing a sharp clear image. This will bring the incident and emergent pencils together, point to point. The same dioptric media that focuses the incident pencils at the retina will focus the emergent pencils $1\frac{1}{3}$ meters anterior to the retina. Hence, when

the waves of these pencils, on their way to their potential foci, $\frac{1}{3}$ meter back of the observing eye, reach its cornea, they will have curvature of — 3 Cm. The dioptric media of the observing eye will focus these pencils, but not at the retina. It will focus them far forward of the retina and well toward the fixed plane of reversal, but not at it. The result is diffusion at area 4, though diffusion



Fig. 39

will be confined within the imaged pupil of the observed eye on area 4. Motion will be quite rapid, and the red reflex will be brilliant, though large. It will be large because of diffusion, and brilliant because of the intensity of the pencils which are drawing near their potential foci when admitted into the observing eye. Diffusion and the intensity



Fig. 40

of these pencils increase together, for diffusion augments until the focal area reaches the fixed plane of reversal at the pupil. The intensity of each pupil is also greatest there, for it then pours its full force into the eye.

This effect is observable when the eye looks at the reflection of a luminous area, as of the flame of a lamp, in a concave mirror, from a position near the focal area of the flame; or at a flame through a lens from the focus of the lens conjugate to a flame. Of course the pencils are more intense than those emitted usually by an eye through its

dioptric media from an image on the retina. But except for the sources of light being an image of a light, instead of a light, the two cases are exactly similar. The dioptric media that produces the retinal image at area 3 is the same that focuses the emergent pencils. So that in myopia of less than one diopter the red reflex is not only apparently increased in size, but it loses none of its brilliancy by diffusion because of the greater intensity of the pencils, or greater volume of light. In hyperopia of the observed eye the emitted pencils are focused by the use of the accommodation of the observing eye; in emmetropia no accommodation is required. In slight myopia the observing eye has no means of focusing the emitted pencils upon the retina. Its static refraction focuses them forward of the retina, and its dynamic powers do not aid it in the least.

Figs. 39 and 40 illustrate case 1. The light in the pupil is disappearing behind the iris in the same direction that the area of light is passing off the observed eye—both being to the left or both to the right; or the light may be considered as entering the pupil from the same direction as the area of light on the face is passing over the observed eye. The reflex shows the same arc of a circle as the arc of the luminous area to which it corresponds. It doesn't correspond to the light on the face, which takes its shape from the mirror, but is a true image of the luminous area. The extent of the reflex or image at area 3 varies considerably. Its extent depends upon (1) the extent of the luminous area, and (2) the amount of diffusion at area 3, due partly to the eye's emmetropia and partly to its being out of focus for the light. But the apparent extent of the red reflex, as well as its apparent motion, depends also, and chiefly, upon the effects at area 4, for diffusion at area 3 may be slight or nothing, while at area 4 the maximum, or nearly the maximum, of diffusion prevails. The display of diffusion at area 4 is limited to the image of the objective pupil on that area, however.

The image on area 3 behind the iris of the observed eye is not shown, but only that area that the iris does not conceal. The apparent extent of the reflex grows until the focal area reaches the fixed plane of reversal of the observing eye, as shown by the arc separating the reflex from the dark areas, although the principal part of it may be concealed. The display in the pupil is quite a different optical quantity than the iris surrounding the pupil. The latter is back of the cornea merely, while the reflex is back of the cornea and lens.

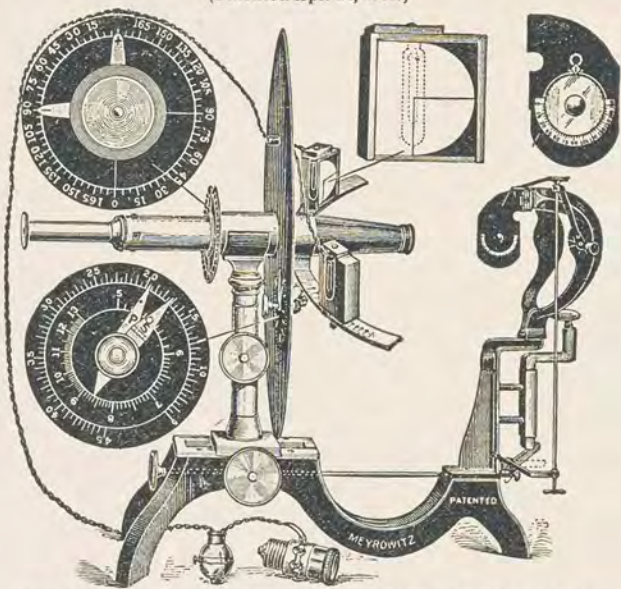
Figs. 41 and 42 (page 91) represent displays in the pupil under different optical conditions. Fig. 41 shows a small luminous area with little diffusion at area 3, and none at area 4 except the copy of that at area 3, for the observed eye is emmetropic, or but slightly hyperopic. Fig. 42 may represent the same luminous area as Fig. 41, but with little or no diffusion at area 3, but nearly the maximum of diffusion at area 4. It shows that the point of reversal is nearly reached, and that motion is very rapid. The eye in Fig. 42 is myopic, but if motion is still with the mirror, it is less than one diopter, although near that amount.

(Continued on page 91)

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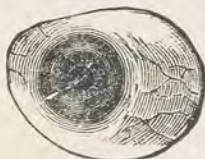
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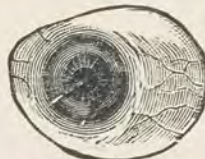
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(Continued from page 87)

Similarly the muscular anomalies of the eye were formerly named (and still are) simply in accord with the apparent deviation, whether upward, downward, outward or inward. The first great step in advance was taken when it was demonstrated that convergent strabismus was usually dependent upon hypermetropia, and divergent strabismus upon myopia. Thus was indicated the proper treatment, viz., the removal of the cause by the correction of the hypermetropia by convex lenses.

Then followed the discovery by von Graefe, of what are known as the "insufficiencies," and of the method of determining them, and of the relation existing between them and strabismus. The time soon came when the term insufficiency began to be regarded as an improper one, because it implied a condition that was not always present. This was supplanted by the "phorias," with the prefixes hetero-, exo-, eso- and hyper-, to designate the general condition and the outward, inward and upward tendencies. This nomenclature has the merit of convenience, and hence has been generally accepted in this country. But it is open to the objection that it groups the deviations according to their anatomical characters and is silent in regard to the etiological factors, classifying these anomalies according to their visible appearance and not according to their cause. In this one respect it is perhaps not much of an improvement over the term insufficiency, but it has come into general use and is likely to continue in favor on account of its convenience for purposes of record, and because in many cases it is not always possible even after a careful examination to determine the underlying causative condition, and, therefore, we must be content with this anatomical diagnosis.

It is unreasonable to expect too much of a mere term, but its employment should not lead any one to adopt erroneous views of the matter. For instance, the statement that in a given case so many degrees of exophoria were found, should be regarded as only a partial presentation of the facts, the final diagnosis not being reached until the cause of the exophoria has been determined.

Thus the term "exophoria" comprises some half dozen or more conditions, differing in anatomical or physiological character, and requiring more or less different treatment. It may arise from one or more of the following conditions:

1. Over-action of one or more of the external recti, due to structural or functional anomalies.
2. Under-action of one or more of the internal recti, due to structural or functional anomalies.
3. Over-action of the divergence center.
4. Under-action of the convergence center, which may be accommodative or non-accommodative.
5. Two of these causes, acting together, as for instance, insufficiency of convergence with excess of divergence.

(TO BE CONTINUED)

Skiascopy

(Continued from page 89)

CASE 3

In case 3, motion is against the mirror and light on the face. There is an actual image between the observed and observing eye—an aerial image, so-called. All the emitted pencils are individually transposed and collectively inverted at this aerial image, or focal area anterior to the observed eye, and from such image or area the pencils that



Fig. 41

reach the observed eye are evolved. It is, to the observing eye, as though the red reflex were at this area, instead of being at the retina of the observed eye, although projection places it in the pupil of the observed eye—the nearest reacting surface in the line of vision. The observing eye refocuses these pencils upon its retina as nearly as may



Fig. 42

(In this work, as published in book form, the above illustrations are printed in colors.)

be. Its ability to refocus the pencils depends upon the nearness of the aerial image. If it is within its *punctum proximum* it will be unable to refocus them at the retina, and diffusion will prevail at area 4. But if the aerial image is beyond the observing eye's *punctum proximum*, it will be able to refocus them. In either case there will be an image, or the semblance of an image, at area 4, the inverse of the aerial image, and, therefore, the same in position as the image at area 3. But motion will appear to be opposite to the mirror in the objective pupil, for this anterior aerial image will move oppositely, causing the image at area 4 to move in the same direction as the reflex in the observed eye. The observer, however, projects this motion as motion opposite to real motion of the reflex.

(TO BE CONTINUED)

Reviews of Current Ophthalmological Literature of the World

(Continued from page 85)

assistance of a double concave lens of high power, she could read sufficiently well with her left eye, but none of the ordinary glasses, either concave or convex, would enable her to distinguish ordinary-sized letters with her right eye. I then instituted some experiments to ascertain, if possible, the cause of this defective vision. Having drawn two bold dark lines of equal length crossing each other at their centers, at right angles, and shown them to the patient, she was able to see them sufficiently well to state that the perpendicular line appeared to her longer than the horizontal. Mr. McAllister furnished me with some mathematical diagrams, which, being shown to the patient, she stated that circles appeared to be ovals, the circles appearing elongated perpendicularly. Various other trials were made, all, however, tending to show that objects seemed to her to be elongated in their perpendicular and shortened in their transverse diameters. Mr. McAllister, having fortunately some lenses, plane on one side and with a concave and cylindrical surface on the other, I soon found one which corrected the distortion. I had prepared for her spectacles with a double concave lens of the proper number for her left eye, with a plano-concave cylindrical lens for the right eye, with which she can read ordinary print with either eye and still better when using both eyes."

As to the name "astigmatism," Mackenzie, in his "Practical Treatise on the Diseases of the Eye" (London, 1854), states that it was first proposed by the Rev. Dr. Whewell. The word is derived from the Greek, and literally signifies a condition without a point (stigma = point). It means that rays of light emanating from a point do not in astigmatism come to a point again.

But we do not want to write an essay on astigmatism. We only wanted to call attention to the fact that about one hundred years have elapsed since its discovery by the deep English thinker.

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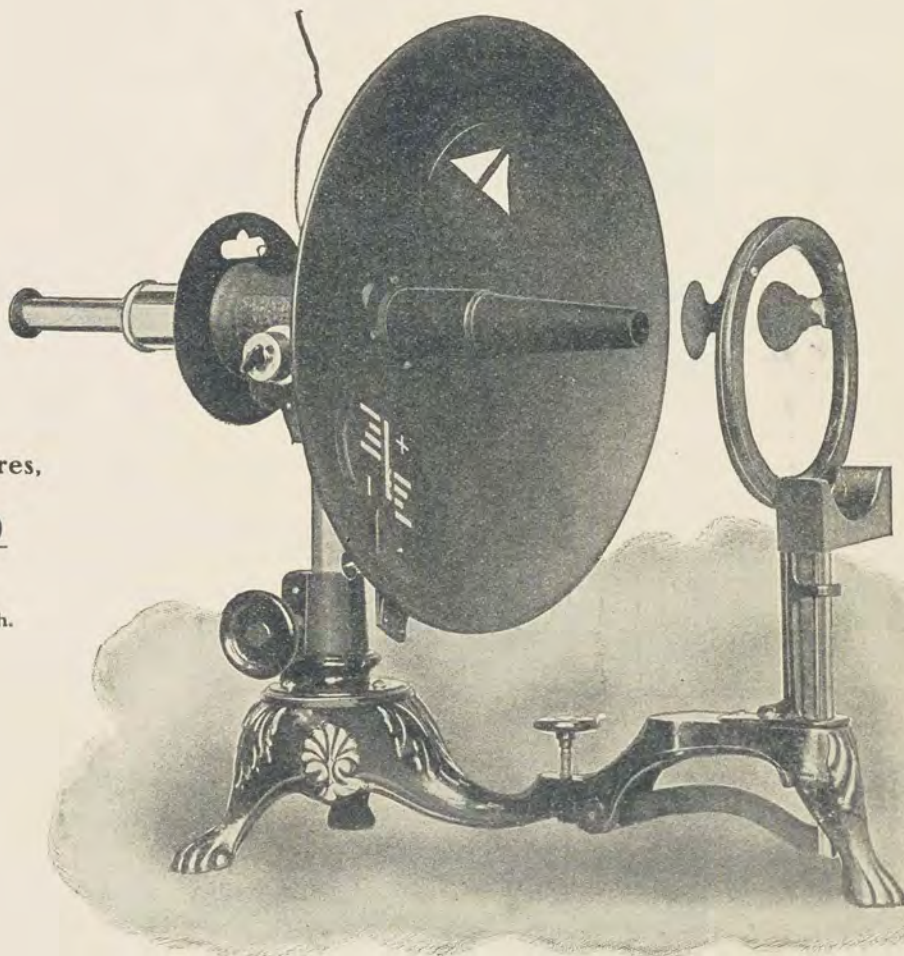
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Optical Questions and Answers

Subscribers wishing inquiries answered in this department must send name and address—not for publication, but as an evidence of good faith. Questions will be answered in the order in which they are received. No attention will be paid to anonymous communications.

To enable us to answer questions satisfactorily and give proper advice in the management of cases submitted to us, it is essential that we be furnished with a complete history of each case and accurate information on the following points:

1. Age. (If not possible to give exact age, always approximate.)
2. Have glasses been previously worn? How long and what number?
3. Visual acuteness of each eye, and what improvement glasses afford.
4. Range of accommodation (without glasses and with them).
5. Evidence of astigmatism (as shown by radiating lines).
6. Test for muscular insufficiency.

"L. J. M."—*Can astigmatism be tested with the ordinary Snellen's test card, or does it require the lines? I have tested a patient's eyes, who could see better with +1 D. cyl. ax. 90°. Is this a sign of astigmatism?*

The card of radiating lines is one of the standard tests for astigmatism. When the patient notices a difference in the clearness and distinctness in the different lines, astigmatism is proven to be present, and those which are most indistinct are at right angles to the defective meridian of the eye. Cylinder lenses are made use of with their axes in the same meridian as the imperfect lines, until one is found that makes all the lines appear equally black. But, unfortunately, this is not always an infallible test, because in the lower degrees of hypermetropic astigmatism the accommodation comes into play and may render the defect entirely latent.

Another test for astigmatism, and perhaps the more satisfactory one, is the use of cylindrical lenses. In this way the test letters of Snellen are employed and cylinder lenses placed in the trial frame, convex usually with axis at 90°, and concave with axis at 180°, and slowly rotated until that position is found which affords the greatest acuteness of vision, and increased in strength as the degree of defect demands. An improvement in vision greater by means of a cylinder than a sphere proves the existence of astigmatism.

When the patient is in doubt as to whether spheres or cylinders afford the greatest improvement in vision, it is fair to presume that no astigmatism is present; or, if so, of slight degree; because when it exists cylinders as a rule are promptly preferred to the spheres. There may be exceptions in cases of hypermetropic astigmatism of low degree, where the defect is masked by the accommodation, the latter being in a state of tonic spasm.

"H. G. P."—*Gentleman, aged twenty-three years. Strong young carriage painter. Has worn a pair of -.25 sph., which he said afforded some relief. R. V., part 3/4; -.50 sph. V., 3/4. L. V., part 3/4; -.50 sph. V., part 3/4. Reducing this correction met invariable refusal. Pupils large. He studies regularly at night. Eyes are frequently bloodshot. Has 1/2° R. hyperphoria. Lateral muscles balance at distance, but are variable. Can overcome only 4° base in; 4° of exophoria in the near. Ophthalmoscope showed abnormal cupping of both optic disks, the edges of the latter being so prominent that the veins disappeared under, to reappear across the white centers of the disks, making the passage of the veins disconnected. I prescribed the minus spheres, as indicated, thinking to relieve his exophoria in the near, it being evident the interni are incapable of much work. What I am the most anxious to ascertain is whether treatment would be of any benefit in the case, and if I had better have him consult an oculist. He will return in ten days, at which time I will examine the tension of the eyeballs.*

In a case of this kind, where the vision is slightly below normal and the use of the eyes is accompanied by asthenopic symptoms, astigmatism is the first thing to be thought of. Our correspondent makes no mention of having made any effort to detect the presence of this defect. Neither have we any record of convex lenses having been

tried, which should invariably be done at the commencement of the examination of every case. This should always be the first step, because hypermetropia is such a common error of refraction and is the cause of so many cases of eye-strain. If the presence of hypermetropia is excluded, then the various tests for astigmatism should follow. Only as a last resort should concave spheres be used in a case where the vision is so nearly normal as this; and then, probably, not so much to correct the slight myopia that may be present as to stimulate, through the accommodation, the convergence and thus tend to a correction of any exophoria that may be present. But such method of treatment is hardly applicable in this case, because we are told that the lateral muscles balance at a distance, and if any insufficiency is present it would more likely be an esophoria, as shown by the ability to overcome only 4° prism base in.

In answer to the question as to whether it is advisable for the patient to consult an oculist for treatment, we scarcely think it is absolutely necessary at present; but we would rather suggest to our correspondent that he make a more searching examination for hypermetropia and astigmatism. We would also add that if it is found necessary to assist the muscles in near work, that it would better be done by weak prisms rather than by concave spheres.

In order that a correct and definite understanding may be had of each case submitted, it is necessary that correspondents should give ALL the particulars asked for at the head of this page.

"D. M."—*Gentleman, aged forty-two years; has never worn glasses. Has known for some time that his vision was not as good as it should be. Upon test I found as follows: R. E., 3/8; with -3 D. + cyl. 1.25 ax. 75° = 3/8 is the best I can do. Has had a lick in this eye from a stone several years ago. L. E., 3/8; with -cyl. 4 ax. 75° = 3/8. Can you suggest any way by which I can improve vision in R. E.?*

We do not quite understand what our correspondent has in mind by saying there is a "lick" in the right eye. We presume from what is said that this eye was struck by a stone some years ago, injuring the cornea, with the result of producing an opacity in this membrane. If a "lick" in the eye is used to express a "corneal opacity," then the case is to a great extent beyond the reach of glasses. The refracting media of the eye must be clear and transparent, so that no obstruction shall be in the way of the rays approaching the retina. A glass placed in front of the eye can only alter the direction of the rays passing through it, so as to bring them to a sooner or later focus; but it is powerless to transmit them through an opacity which may be located in any of the media. In this case the burden of vision will necessarily rest largely upon the left eye, which, with its correcting lens, enjoys a normal acuteness of vision and is therefore probably equal to the task.

"M. J. M."—*A young lady, aged thirty-two years, complains of dizziness and strained feeling in the eyes. She has been wearing glasses for the past four years, which, on examination, I find to be -1.25 D. cyl. ax. 180°. On looking at the test-card hanging twenty feet away, with the naked eyes, she was barely able to decipher a few letters on the No. 30 line. Following my usual routine, I tried first convex spheres, which, while not entirely rejected, caused no improvement in vision. I then tried convex cylinders, which were at once accepted. The best combination I could find was +.50 cyl. ax. 90° - .50 sph. ax. 180°. What would you advise in this case?*

This case seems to one of mixed astigmatism. The person who prescribed the first correction took account only of the myopic meridian, and the hypermetropic meridian, which is really the most important, was overlooked or neglected. The concave cylinders, which she has been wearing, have doubtless been of some value in partly equalizing the difference between the meridians, but for

the reasons mentioned above they fall far short of their purpose. If our correspondent feels sure that the formula he has given represents the exact condition of the refraction he will be justified in ordering the same, probably reducing it to the following spherocylinder: -.50 sph. \odot +1 cyl. ax. 90°. There is every probability that these glasses will afford much more comfort and relief than the concave cylinders first prescribed.

"G. J. W."—*A little girl, eight years of age, complains of a most annoying itching in her eyes, and cloudiness of vision when she reads and studies. I find, on examination, that her acuteness of vision is 3/8 barely, there being some hesitation in naming a few of the letters. I could not find any evidence of muscular insufficiencies. Please give me some assistance in the management of the case.*

The probabilities are that there is an element of hypermetropia in this case, which is responsible for the cloudiness of vision, and the strain to overcome which most likely causes the itching. In addition to the hypermetropia, there may be some astigmatism. The difficulties of correcting this case are greatly increased by her youth, as not much dependence can be placed on the answers of so young a child. Therefore, the subjective examination will have to be verified or modified by the objective examination. The ophthalmometer, if one is available, may be used to determine the presence or absence of astigmatism, and the retinoscope to measure the amount of hypermetropia. This, of course, will require some skill on the part of the operator, and we would suggest that he should not make the glasses too strong at first. The amplitude of accommodation, as shown by the position of the near point, may be of some value in forming a conclusion as to the extent of the deficiency of refraction. It is not improbable that the glasses may have to be changed two or three times before comfort is secured.

"J. G. W. B."—*There is a case in this city of a person about twenty-five years old whose vision shows on the chart 3/8, but has been troubled of late with headache, and her physician, who is also an optician, has prescribed +1.50 lenses. She says her vision is blurred by wearing them, but her physician claims that she should wear them and get accustomed to them. I tell her as a matter of refraction I believe her physician is in error, especially as she has headaches. She shows no hypermetropia nor any signs of astigmatism on the chart, and it must be that the rays of light are refracted very short of the retina. Can you give me any information why her physician prescribes such powerful lenses? Is there any reason why such lenses should in any way benefit the accommodation? It must be a severe strain upon the ciliary muscles continually. The +1.50 are prescribed for distance.*

There are two well-established facts to which we would call attention:

1. Headaches arising from the eyes result from strain of the ciliary muscle, occurring in hypermetropia and hypermetropic astigmatism.

2. Convex lenses lessen the strain and relieve the ciliary muscle by doing a portion of the work of refracting which would otherwise have to be done by the muscle.

In this case our correspondent states that no hypermetropia is shown, but he makes no mention as to what tests were made use of to determine this point. A vision of 3/8 is no indication of the non-existence of hypermetropia, which may be present in a latent form. We would infer that the physician who prescribed these convex lenses found some evidence of hypermetropia, in which case he did right. The fact that the vision is blurred by them is only to be expected, and if the diagnosis is correct the eyes will gradually become accustomed to the glasses. We are not given sufficient information on which to base a definite opinion, but on the surface it looks as if the prescription of the physician was a proper one, because the wearing of convex glasses tends to develop any latent defect, and thus enable the observer to manage his case more intelligently.



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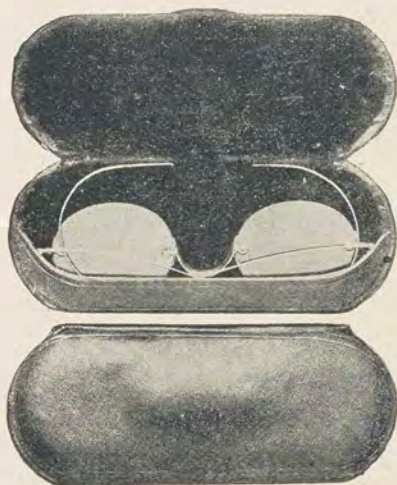
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Auto-Observation of Glaucoma

By Dr. EMILE JAVAL, Paris

EVERYBODY who treats refractive errors of the eyes knows the name of Javal, the great French ophthalmologist, whose work in ophthalmometry alone has made him famous all over the world. Very sad, indeed, is the fate of incurable blindness that has befallen this great scientist, in spite of the best treatment that is known to the present state of ophthalmology. It will surely interest our readers to read the careful observations which were made for many years by Javal himself, on his own eyes, about the progress of glaucoma, that most insidious disease. The translation is from the *Annales d'Oculistique* for the *Ophthalmic Record*, by Alvin A. Hubbell, M. D. :

Introduction

Conformably to the pledge which I gave in my communication made on May 6, 1901, apropos of the report of M. de Wecker to the French Society of Ophthalmology, a communication which has been reproduced *in extenso* in the *Annales d'Oculistique*, I give here a resume that a confrere has kindly made according to notes, taken from day to day, in regard to my two eyes affected with glaucoma. I renew, here, the expression of the desire that more competent confreres may find indications, according to which, in a similar case, it might be necessary either to operate sooner or to abstain from all operative intervention. In the present state of our knowledge, the operative intervention was justified in both of my eyes. Both times the result was fatal. In the details which follow there will be found circumstances which should have caused either earlier intervention or abstention.

Observation

Dr. Emile Javal, member of the Academy of Medicine, was born in 1839. General health good; tendency to constipation. Had several attacks of acute articular rheumatism near the age of thirty-five years, and *acne juvenalis* up to fifty years of age. The urine, often examined, habitually presented an excess of uric acid. Once, during an eruption of *ecthyma*, there was found the presence of sugar. Permanent tinnitus of the left ear began near 1880, and has never ceased. The hearing for the watch and speech is bad on both sides, especially on the left. In 1901, a watch, which should have been heard at one meter, was heard at only ten centimeters on the right side, and only on contact on the left. Whispered voice was also far from being heard at the normal distance.

RIGHT EYE.—The first ocular symptoms appeared in 1881, in the form of fatigue of the right eye, following labors necessitated in the construction of the ophthalmometer, during which the right eye alone was employed. A short time afterward, slight prodromic symptoms of glaucoma began; obscurations, halos around flames, slight dilatation of the pupil, with transient increase of tension.

The attacks of the right eye ceased on the application of gelatine disks containing from 1/10 to 1/5 milligram of eserine. Gradually they became more frequent, and, in the last months of the year, the acuity of vision was not affected in the intervals,

the degree being as it was before.* There was never pain or injection of the eye. There was pronounced hemeralopia, and red was badly perceived. An oculist, who was in Paris, transiently, in the spring of 1885, found quite a pronounced excavation, and advised a surgical intervention.

On November 10, 1885, obscurations were very great, notwithstanding the pilocarpine. The eye was inundated with eserine, and, on November 11th, Masselon made a sclerotomy upward, according to de Wecker.

On removing the bandage on the 16th, the patient found that the vision of the operated eye was darker than that of the other. On awakening a brilliant phosphene was provoked in the left eye by a quick movement of looking toward the right, the phosphene being renewed three times, and diminishing in intensity on each trial. On November 30th, the eserine (1/4 milligram) was put into the eye morning and evening, and afterward, in the evening, 0.5 milligram of cocaine. The last intervention was followed by a very strong dilatation of the pupil, the diameter of which exceeded 7 millimeters, and by a frightful obscurations. More than 20 drops of pilocarpine and 20 disks of eserine were successively put into the eye, but it was only toward 4 o'clock in the morning that the pupil became contracted.

December 2d.—V. = about 1/2.

3d.—Inferior sclerotomy was performed.

The halos reappearing, notwithstanding the employment of eserine, an iridectomy was done on December 11th, after a preliminary instillation of cocaine and eserine. The operation was made upward, exactly in the limbus, with a small conjunctival flap, the section being about 6 millimeters. A moderate excision was made of the iris, which projected spontaneously into the wound. Re-entrance of the iris was exact. The eye preserved a very noticeable degree of tension, with complete contact of the iris with the cornea. The pupil was occupied by a small coagulum of blood, although traces of blood which had collected had been expelled several times. Large instillations of eserine were used after the operation. During the whole day and a large part of the night there was neuralgia in the eye, nose and superior maxilla. The eye had never been painful before the operation.

Abundant instillation of eserine was continued the following days. On the 14th the patient began to count fingers. There was only a trace of the anterior chamber until the eighteenth day, when it was reformed. There was a slight cedema of the conjunctiva at the place of the wound. Quinine was taken in daily doses of 0.75 to 2 grams; hot compresses; milk diet. The acuity of vision rose to 1/10 on the 31st. On the 20th, large flakes in the vitreous humor were thought to be seen, no traces of which were found on the 29th. The ophthalmoscopic examination was very difficult because of the extreme sensibility of the eye to the light.

Afterward the general condition was worse, and the nights were bad. The patient detected a large central scotoma by means of a lighted cigar. The field of vision was covered by a marbling of small, brown images. For some days hypodermics of pilocarpine were tried, while continuing the regime. On January 5, 1886, there was an attack of quite severe pain; the fundus of the eye was seen fairly well; no new changes were presented. The patient counted fingers at 1.2 meters in the

morning and at 80 centimeters in the evening. There was slight cedema of the lids and lachrymation. 0.5 gram of iodide of potassium per day was ordered.

On January 8th a foreign confrere, called in consultation, gave the following description of the state of the eye :

Right eye: Pronounced injection of the conjunctiva, but neither chemosis nor swelling of the lids; tension perceptibly increased; sensitiveness to the touch; cornea very nearly transparent; anterior chamber of normal depth; a perfectly complete, broad coloboma pointing upward; no posterior synechia. Ophthalmoscopic examination, which was difficult, revealed a diffuse opacity of the vitreous body; however, the upper portion of the cupped disk was visible; no evidence of retinal hemorrhage. Acuteness of vision equaled fingers at a distance of 1 meter; field of vision, free.

All treatment was stopped except the quinine. Permission was given to go out of doors, and, on January 11th, after an outing during a time of snow, without the eye being bandaged, there was during the night an attack of intolerable pain, which ceased only after an injection of three centigrams of morphine. The tension was increased; swelling of the right cheek; no other objective symptoms.* The following night was passable (1 centigram of morphine). Salicylate of soda was prescribed. On the following days there were, from time to time, attacks of pain, necessitating hypodermics of morphine; lachrymation often very pronounced; phosphenes of varied appearances.

January 31st.—Perception of very luminous objects toward the limits of the visual field still persisted, especially on the external side.

February 5th.—With the right eye the patient still perceived the light of a lamp in different directions, but very confusedly. The sensibility rapidly diminished while making this experiment, and a little pain was produced. There were frequent crises of lachrymation, with cedema of the right nostril.

19th.—The left eye being closed, it was impossible to discover with certainty the position of a lighted candle. Every effort of vision with the right eye provoked pain.

20th.—Posterior sclerotomy was performed between the inferior and external recti muscles with a von Graefe knife plunged equatorially through the sclera to a depth of 5 to 6 millimeters. The instrument, having executed a quarter of a turn, was withdrawn without detecting a perceptible flow of liquid. In the afternoon there was quite severe pain; the eye saw a lighted candle; the night was calm. The next day and the days following there was some pain. There was photophobia of the left eye, which gradually diminished as the right eye blanched.

March 6th.—Saw the time on a watch. Ophthalmoscopic examination: Media entirely transparent; excavation very pronounced; veins large; arteries very narrow; T. + 1.

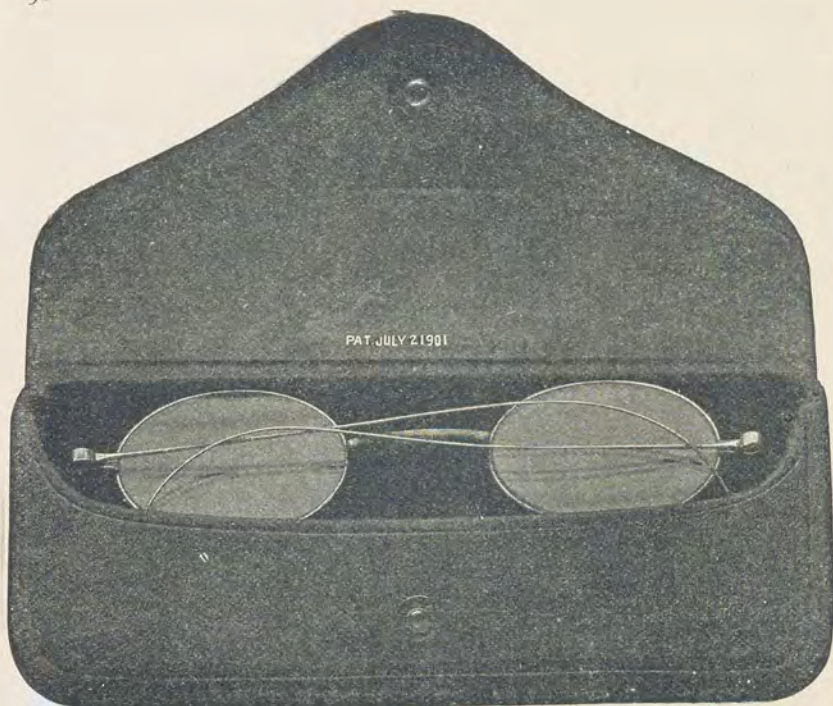
9th.—There was noticed the presence of a synechia. Atropine, up to 3 milligrams, and 1

*Up to this time the attending confreres had kept me in the house, and even in bed, during a large part of the time. The general condition being extremely disagreeable, I had succeeded in obtaining permission to go out. It was not to the walk that it is necessary to attribute the violent attack which followed. I do not hesitate to attribute the attack in question to the very bright, luminous impression produced on the right eye by the snow which covered the ground, the eye having been held open intentionally during the walk, with the idea of making definite sacrifice in order to be restored to my occupations.

It will be seen that, in regard to the left eye, which was also lost, after iridectomy and the re-establishment of the anterior chamber, we did exactly the contrary, and maintained the eye in a permanent obscurity up to this day. More than ten months after the iridectomy, this eye possessed a trace of sensibility to light.—E. J.

(Continued on page 97)

*The lowering of visual acuity consisted in a lowering of the luminous sensibility, which was determined in a splendid way by controlled reading. A pencil being held horizontally over a page of print, letters were made to completely disappear which should have been read by the right eye, and, notwithstanding, when I closed the left eye the acuity of the right was amply sufficient to read.—E. J.



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A HAPPY NEW YEAR**

Auto-Observation of Glaucoma

(Continued from page 95)

milligram of cocaine were instilled. The eye became red, painful, some pain radiating toward the teeth. The eye was not hard; the pupil slightly dilated. The redness and pain diminished in the course of the day.

16th.—The sensibility of the right eye to light was rather increased, but the faculty of distinguishing did not cease to diminish. The following experiment was made very often: Seated before a window, the patient covered the eyes with the two hands. On uncovering the right eye he perceived, fully as well when it was open as when it was closed, a mass of small, luminous spots, especially toward the upper part. These spots were effaced quite rapidly. No sense of obscurity was produced on recovering the eye after 4 or 5 seconds, but much after 1 or 2 seconds. Excepting this transient phenomenon, the loss of vision was total.

April 11th.—After energetic instillation of atropine into the right eye, the pupil became dilated and there was exposed a small deposit on the anterior surface of the crystalline lens. The cornea was hazy.

13th.—On ophthalmoscopic examination, which was very difficult, the papilla, which formerly was pale, appeared nearly as red as the rest of the fundus of the eye.

May 25th.—Examined by the inverted image, the place of the papilla was imagined by the appearance of a disk, scarcely more clear than the rest of the fundus of the eye, and bordered by a dark-red surface. From this point there proceeded a blackish membrane. By the erect image there was seen in supero-external quarter a membranous opacity veiling this part of the fundus of the eye, and ending below by a distinct line.

July 10th.—There was an attack of quite severe pain in the right eye. Some days after, the presence of a little blood was discovered in the anterior chamber.

November 18th.—The right cornea was sensibly clear, but the exploration of the deep parts of the eye was rendered impossible by the presence of large, black, movable flakes in the vitreous body. T. + 1. The eye was not sensitive to pressure.

1887, March 1st.—The right cornea was transparent, excepting at a very circumscribed point at the internal edge, where there was a small spot of sclerosis. The lens was transparent. The vitreous body was absolutely diffuse, preventing any exploration of the fundus. Iris much atrophied, being reduced to a small band at the lower part. Inside, and especially outside, parallel to the artificial pupil, there was observed a black band, indicating a detachment of the insertion of the iris (irido-dialysis). Below, there were remains of old, ruptured synechiae. T. somewhat above the physiological state.

Every morning the patient observed the phosphene already mentioned. On awaking, there was a slight secretion and sensitiveness to light.

1888, January 29th.—There were some phlyctenes at the edge of the right cornea. For many weeks the eyes were dry on awaking, but after several minutes abundant lachrymation supervened.

February 25th.—Cornea was transparent, and there was no point of sclerosis. The vitreous body was occupied by a diffuse, but slight cloudiness, the fundus of the eye giving quite a bright, red reflex. It was impossible to distinguish the details of the fundus. T. very little above the normal.

October 8th.—There was a keratitis of the

right eye with effusion of blood into the anterior chamber.

1890, April 5th.—There was a very observable cystoid cicatrix. The central parts of the cornea presented semi-transparent, glaucomatous opacities. The iris was reduced to a thin band. The reflex of the fundus of the eye was quite bright; impossible to distinguish details, because of the corneal opacities.

1900, March 16th.—At the moment of an aggravation of the condition of the other eye, enucleation was made.

The eye, hardened in formol, frozen, and cut in two, presented a complete detachment of the retina, which was attached only to the ora serata and to the excavated papilla. There were numerous hemorrhages of different dates into the retina and sub-retinal space. The lens seemed to be pushed against the cicatrix of the iridectomy, the region of the cicatrix presenting an excavation corresponding to the lens-border. The incision was situated about 2 millimeters from the filtration angle (the section passed near one of the edges of the coloboma). The iris was in contact with the cornea, probably adherent to the cicatrices left by the sclerectomies. The chamber was limited behind by a very tense diaphragm, formed by the altered hyaloid.

LEFT EYE.—1885, August 1st.—After 3 hours of work in the evening, there was a halo of the left eye.

1886, January 8th.—A foreign confrere called in consultation for the right eye, found the left eye completely normal.

March 27th.—Halos appeared, and there was very slight dilatation of the pupil of the left eye.

June.—Halos were seen every 8 or 15 days; for example, after the smallest glass of wine. Adopted a very severe and rather vegetable regime; much corporal exercise.

1887, March 1st.—Limited reading, writing and observation, to strict necessity, never using vision for near objects without a convex glass to suppress the accommodation.

1890, April 5th.—The papilla was absolutely normal.

1895, January 29th.—The papilla was normal, a little red, no excavation; slight halo. Field of vision, examined with the hand, was intact; > 3.

November 27th.—The halos became more and more frequent. They disappeared after a compression of the eye or a drop of pilocarpine (2%). Two days before there was a more severe attack with slight pain, general redness of the eye and unpolished aspect of the cornea. Calm after two hours (pilocarpine, 2%).

1897, February 16th.—Not a day has been passed without pilocarpine. There was discoloration of nearly the external third of the papilla, this part being excavated, with the bordering retinal vessels curved at right angles.

1898, October 12th.—On the previous evening there were extremely marked halos, and obscurations were very pronounced, although the diameter of the pupil was not more than 4 millimeters. Free instillation of pilocarpine. The next morning the pupil was very large, and all day resisted eserine and pilocarpine. In the evening the installation of eserine and pilocarpine was continued. The next morning the pupil was less than 2 millimeters. A slight injection of the conjunctiva still persisted for some days.

1899.—In the course of 1899 use was made of pilocarpine, at first 1%, afterward 1% and 2%, keeping watch of the state of the eye by means of a pupillometer, formed of a plate of copper, perforated with 5 pairs of holes, 2, 2.5, 3, 3.5 and 4 mil-

limeters in diameter respectively. It was rare that there was not produced a crisis when the measure by the pupillometer exceeded 4 millimeters. When the crisis was produced, which happened five or six times in the year, it was necessary to use repeated instillations of the pilocarpine solution, 2%, followed, sometimes, by instillation of eserine, or even by a hypodermic of morphine, in order to arrest it. It always ceased suddenly, the pupil not yielding to the first instillations, but passing afterward to a diameter less 2.5 millimeters. The halos still persisted for one or two hours after the contractions of the pupil.* After each crisis, thus cut off, it was for some days superfluous to make daily instillations of pilocarpine. Visual acuity was always normal.

The condition changed after a crisis which supervened September 9, 1899, in consequence of a violent emotion. From that day, visual acuity never became wholly normal. There were no new, subacute crises. Under the influence of the daily instillation of pilocarpine, the pupil was maintained at about 3.5 millimeters; never did the diameter descend below 3 millimeters; but the visual acuity slowly and continuously decreased to a point where it was habitually difficult to distinguish sufficiently to eat without apprehension, and impossible to recognize people, although, remarkable circumstance as it was, the visual acuity, measured with black characters on a white ground, remained in the neighborhood of normal. Toward the end of the year it was still nearly normal, but, if the light was lowered so as to diminish the visual acuity of a normal person to 1/2, that of the patient descended to below 1/4. It was difficult for the patient to go about in the night in the best-lighted streets. There was slight narrowing of the visual field on the nasal side; but it affected the part near the point of fixation for only extremely small and poorly-lighted objects, a diminution of field which would have escaped an observer less practiced. In fixing a letter of a printed word, the patient saw only one, at most two, to the right of the letter fixed, and there was haziness, also, of all the lines situated below. This phenomenon, also, would certainly have been passed unperceived by a subject who had not had much practice in the experiments of physiological optics.

As a result of this lowered visual acuity, it became necessary in going about in the streets to wear an exactly correcting glass, although for several years it has been prudent to employ the glass which brought the *remotum* to 1 meter.

February 3d.—Departed for England in order to be placed in the hands of a confrere and friend.

February 5th.—Condition was as follows: R. E., V. = 0; T. normal; globe was not sensitive to the touch; slight injection; vascularized, projecting cicatrix, corresponding to the iridectomy. L. E., acuity of vision varied, being about one-half; visual field contracted; T. + 1. The papilla seemed very slightly excavated. The pupil was small, and the anterior chamber shallow. For some time the patient had been much excited by preoccupations having no relation to the disease, so that, in part, the nights were passed without sleep.

*The obscurations were caused by the corneal disturbance, which was, most frequently, objectively imperceptible. The corneal change began at the periphery, occupying an annular space the width of which increased with the intensity of the crisis, until the entire cornea was invaded. In fact, in slight, prodromic attacks, I could perceive a halo only at the moment when, in the obscurity, I looked at the luminous point. This halo disappeared as soon as the pupil had undergone the nearly instantaneous contraction, caused by the vision of the luminous point. In attacks a little more severe, it needed an energetic pupillary contraction, obtained by the myotic, to cause the halo to disappear. In attacks still more severe, the halo persisted at first after maximum contraction of the pupil, and only disappeared one or two hours later. The cornea then became normal again.

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Optical Organizations

NATIONAL

American Association of Opticians

J. H. ELLIS, President, South Bend, Ind.
E. L. JONES, Secretary, Sandusky, Ohio.

Meets annually. Next meeting to be held in Boston, in August, 1902.

Worshipful Company of Spectacle Makers (England)

THE RT. HON. SIR WM. HART DYKE, Bart., M. P., Master.
COL. T. DAVIES SEWELL, F. R. A. S., Clerk, Guildhall, London, E. C., England.

British Optical Association

S. COWAN, F. R. O. A., President.
J. H. SUTCLIFFE, F. R. S. L., F. R. O. A., Secretary, 17 Shaftesbury Avenue, London, W., England.

Canadian Association of Opticians

W. G. MAYBEE, President, St. Catharines.
ALEX. MOFFAT, Secretary and Treasurer, Brantford.

INTERSTATE

New England Association of Opticians

C. N. QUIMBY, President, Boston, Mass.
G. A. BARRON, Secretary, 3 Winter St., Boston, Mass.

Meets third Tuesday of each month, except July and August.

STATE

New York State Optical Society

F. L. SWART, President, Auburn, N. Y.
F. B. MARCHANT, Sec'y, 56 Flatbush Ave., Brooklyn, N. Y.

Pennsylvania Optical Society

A. MARTIN, President, Philadelphia, Pa.
C. A. LONGSTRETH, Secretary, 228 Market St., Phila., Pa.

Indiana Optical Society

E. SHIPLEY, President, Greencastle, Ind.
G. M. C. BARTMESS, Secretary, Clinton, Ind.

Next meeting, January 22d, at Indianapolis.

Michigan Optical Society

NELSON K. STANDART, President, Detroit, Mich.
E. ELMER, Secretary and Treasurer, 105 Western Avenue, Muskegon, Mich.

Iowa Optical Society

H. P. HOLMES, President, Des Moines, Iowa.
J. C. CLARK, Secretary, 407 Brown Block, Sioux City, Iowa.

Illinois Optical Society

W. C. SOMMER, President, Chicago, Ill.
LOREN L. BOYLE, Secretary, 103 State Street, Chicago, Ill.

Maryland Optical Society

F. W. McALLISTER, President, Baltimore, Md.
W. H. KETTLER, Sec'y, 109 W. Lexington St., Baltimore, Md.
Meets at rooms of Photographic Assn., Baltimore, Md.

California Optical Association

E. M. ACKLEY, President, San Francisco, Cal.
ALBERT J. SCHUHAY, Sec'y, 308 Hays St., San Francisco, Cal.
Next meeting, January, 1902.

Oregon Association of Opticians

J. O. WATTS, President, Eugene, Oregon.
C. L. HAYNES, Secretary, Portland, Oregon.

Washington Association of Opticians

H. CLAY EYERSOLE, President, Seattle, Wash.
L. W. KACHLEIN, Secretary, Tacoma, Wash.
Next meeting, January, 1902, at Whatcom.

Granite State Optical Association

GEO. H. BROWN, President, Manchester, N. H.
W. E. BURPEE, Secretary, Manchester, N. H.
Meets third Wednesday of January, March, May, September and November.

Wisconsin State Optical Society

ALVA SNIDER, President, Beloit, Wis.
WALTER H. GRUNERT, Secretary, Green Bay, Wis.
Next meeting to be held in January, 1902, at Milwaukee.

North Carolina Optical Society

S. R. PECK, President, Charlotte, N. C.
W. H. LEONARD, Secretary, Winston, N. C.

Minnesota Optical Association

S. B. MILLARD, President, Litchfield, Minn.
C. A. SNELL, Sec'y, 608 Nicollet Ave., Minneapolis, Minn.
Next meeting, March 4th, at Mankato.

Maine Association of Opticians

H. E. MURDOCK, President, Portland, Maine.
ROBERT B. SWIFT, Secretary, Portland, Maine.

Tennessee Optical Society

H. C. LEDERER, President, Springfield, Tenn.
E. B. MEYER, Secretary, Memphis, Tenn.

Colorado Optical Association

R. B. FINCH, President, Denver, Colo.
R. H. BIEGEL, Secretary, 636 Sixteenth St., Denver, Colo.
MISS E. H. CHAPMAN, Cor. Sec'y., 1655 Welton St., Denver, Colo.
Meeting and Banquet, January 11th.

Kansas Association of Opticians

W. J. LEWIS, President, Topeka, Kans.
WALTER STARCKE, Secy. and Treas., Junction City, Kans.

Missouri Association of Opticians

J. W. TALBOT, President, Nevada, Mo.
JOHN TITUS, JR., Secretary, Kansas City, Mo.

Missouri Optical Society

J. H. VINSON, President, Carrollton, Mo.
S. M. COFFMAN, Secretary, Braymer, Mo.

LOCAL

Central New York Optical Society

A. W. GOLDER, President, Seneca Falls, N. Y.
H. C. WATTS, Secretary, Syracuse, N. Y.

Meets second Wednesday of January, March, May, July, September and November.

New York City Optical Society

H. W. APPLETON, President.
M. H. HARRIS, Rec. Sec., 142 W. 23d St., New York City.
Meets second Wednesday of each month at Fifth Avenue Hotel.

Rochester Optical Club

G. R. BAUSCH, President.
HARRY M. BESTOR, Secretary, Rochester, N. Y.

San Diego Optical Society

HEWLETT SCUDDER, President.
F. M. TAYLOR, Secretary, San Diego, Cal.

Utica Optical Club

A. M. KENNEY, President.
E. D. KENNEY, Secretary, 243 Genesee Street, Utica, N. Y.

Southern Minnesota Optical Association

J. W. GRAINGER, President, Rochester, Minn.
J. W. ANDERSON, Secretary, Rochester, Minn.

Chicago Optical Society

Names of permanent officers will appear in February issue.

Optical Organization and Progress

OUR list of optical societies has been augmented by the names of two new organizations, the Chicago Optical Society and the Southern Minnesota Optical Association. These, we take it, will work in harmony with their respective State associations, and prove useful factors in furthering the good cause. Indeed, one of the most gratifying features of optical organization so far has been an entire absence of serious friction and a most promising unity of aim and effort. New York State boasts of no less than four separate organizations, all friendly and unitedly watchful of the interests of the refractionists. Of course, honest individual differences of opinion will always exist, but inter-society discord is something the cause is not yet in a condition or position to bear. There are now twenty-six organized optical societies in this country, and, we trust, that those of them which have lapsed into a condition of inactivity will take a renewed life with the new year and give a helping hand to their more enthusiastic brethren in their labors for their own elevation and the advancement of the profession.

THE progress made during the past year in the optical field has been chiefly educational, which is the proper direction for improvement. Only the opticians of the

State of Minnesota have succeeded so far in securing for their profession a recognized legal status, but other State societies will renew their efforts for legal recognition at the proper time with greater chances of success and better posted as to the character of legislation which will best suit their case. This is one of the instances where delay may not be an unmixed evil. While it is well to make haste there is no imperative need of urgency, for the profession of the refractionist has been accorded the recognition of the public if not of the law, and even the medical profession has grown quite tolerant towards it. Education is the mainspring of advancement, the *sine qua non* of professionalism, and the opticians should redouble their efforts this year to perfect themselves in their specialty. In this and other respects they will find THE KEYSTONE even more serviceable to them than in the past.

The Optical Society of the State of New York

The following request for additional funds has been sent to the opticians of the Empire State:

To the Opticians of the State of New York:

Most of you are aware of the fact that at the annual meeting of the Optical Society of the State of New York, held in Buffalo last June, there was a committee of three, consisting of Messrs. Ferguson, Smith and Oertel, appointed with power to have drawn and introduced at the present session of the Legislature a bill to legalize the profession of optometry in this State. The committee has been diligently at work on the same since last July, and are satisfied that the prospects are very bright for its passage, but are handicapped for lack of funds to carry this measure to a successful issue. If all interested in optics in this State would contribute what he could afford to this work, the difficulty would be easily overcome.

If you are interested in your own welfare and protection and have not already contributed, I earnestly request you to send at once to the treasurer, W. D. Oertel, 600 North Salina Street, Syracuse, N. Y., whatever you feel you can afford to give toward the passage of this measure. Without your financial aid this work cannot be carried on. Lend your support to the committee by sending in your subscription to-day.

Respectfully,
F. L. SWART,
Pres. Opt. Soc. S. of N. Y.

Chicago Optical Society

The second meeting of the Chicago Optical Society was held on the evening of December 4th, in the office of Burr Weaver. The main object of the meeting was to complete organizing preliminaries. It was intended that the election of officers should form part of the evening's programme, but the committee on constitution and by-laws, appointed at the first meeting of the society, submitted a report in which it was provided that the election take place in January of each year. It was accordingly arranged that officers be elected on January 8, 1902, in Dr. Weaver's office. The meeting was a decided success, and the members manifested an interest in the proceedings which furnishes unmistakable evidence that the society has a long and useful career before it.

WE WISH TO EXTEND OUR THANKS TO THE JOBBERS

for the generous orders and cordial support which they have given us during the past year.

The growth of our business has proved to us that a need existed for a factory such as we possess, and we have therefore felt justified in increasing our plant and equipment fifty per cent. in the last six months.

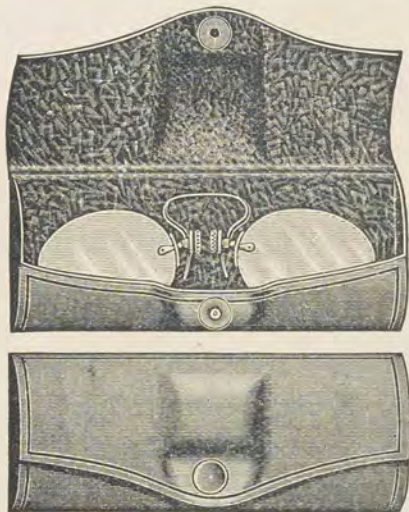
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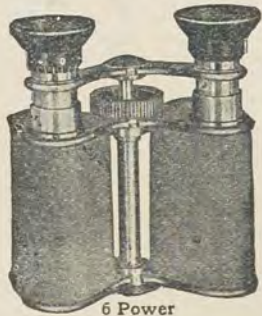
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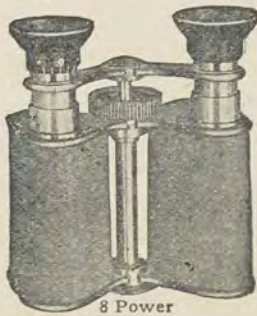
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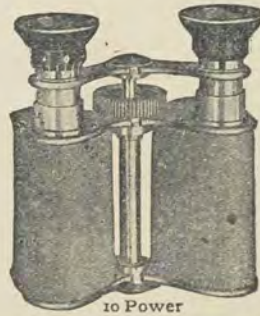
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Minnesota State Optical Society

The regular quarterly meeting of the Minnesota State Optical Society was held on December 3d, at the Hotel Ryan, St. Paul, President Millard in the chair. The minutes of meetings held on September 3d and 4th were read and approved. The report of Secretary Snell showed a balance in the hands of the treasurer amounting to \$339.82. An application for membership, held over from the September meeting, was rejected. Ten formal applications were received, and it being the final meeting for 1901 the rules were temporarily suspended and all the applicants elected to membership. The applicants were: Paul C. Hirschy, V. Stonedale, Fred. O. Fiske and Arthur R. Proels, of Minneapolis; J. F. Patterson and William S. Dippe, of St. Paul; Theo. E. Schleuder, Albert Lea; Willard G. Shane, Chisholm; Edmund H. Abbott, Owatonna, and Hubert P. Marx, Shakopee. A new certificate of membership was adopted and the secretary was instructed to get some in readiness and send one to all members who had paid their dues for the year 1902.

A motion was made and carried that the initiation fee for members be reduced from \$5 to \$2.50 for the year 1902, with instructions to members to use their best endeavors with a view to increasing the membership to 250, the old rate of initiation to be in force thereafter. The secretary was instructed to send notice of the proposed amendment to the by-laws, i. e., the elimination of section 7, article 3, to all members with the notice of the next meeting.

A committee, consisting of seven members, on the question of legislation, composed of Nathan Gumbiner, Minneapolis; Frank L. Wilson, Mantorville; Frank Heitzman, St. Paul; A. M. Fargeman, Fergus Falls; Chris. H. Nerbovig, Mapleton; A. M. Harper, Renville, and C. A. Snell, Minneapolis, was appointed. The object of the committee is "to find out what would be advisable to do in regard to future legislation and to acquaint themselves with the workings of the optical law passed last winter, and matters pertaining to the same."

It was decided to hold the next meeting at Mankato on the first Tuesday in March, when an afternoon and evening session will be held. The board of managers briefly outlined their plans for the coming year, which, if carried out, will certainly make the meetings very valuable. The plans comprised the holding of clinics at every meeting and having papers on interesting subjects read and explained, the object being to give every member the utmost benefit from his connection with the society.

Notes of the Meeting

The association has taken a move in the right direction, in reducing the initiation fee one-half for one year. All honorable and qualified opticians should hasten to avail themselves of the excellent opportunities offered in its programme for the coming year. Union is strength, and the larger the union the greater the strength. The association has passed its initial stages, and is quickly assuming an expansive character. The December meeting was not as largely attended as it should have been, but this was due in a great measure to the advent of holiday trade. A commendable enthusiasm in the business of the meeting was evinced by A. M. Harper, of Renville, and A. F. Robertson, of St. Cloud. The only reticent members were Messrs. Huhner, Stillwater, and De Mars, Minneapolis, but their taciturnity was of a philosophic rather than apathetic character. One stalwart, in

counseling the younger members, exhorted them in rather expressive terms. "We must," he said, "get out on the firing line and do our share of skirmish firing." The March meeting promises to be one of the most auspicious reunions in the history of the society.

Chris. H. Nerbovig, Mapleton, sent his regrets at not being able to attend the meeting, owing to the death of his wife's uncle and sickness in the family. "These are the only things that could keep me away," he said.

American Association of Opticians

The committee on exhibits of the American Association of Opticians held its first meeting in Boston on the evening of December 17th, and formulated plans for the exhibit at the next convention of the association to be held at Boston in August. The work was mapped out and subcommittees appointed to attend to various branches of the work. A circular-letter to be sent to manufacturers and others who are likely to have goods to exhibit, will be prepared and sent to those interested. The committee also arranged to see that the delegates, as far as the exhibition part of the convention was concerned, will be well looked after and every provision made for the convenience and comfort of those who attend the convention.

Indiana Optical Society

The following announcement has been received from E. Shipley, president of the Indiana Optical Society:

"Our first quarterly meeting for the coming year will be held in the Century room, Dennison Hotel, Indianapolis, on January 22d, at 7.30 P. M. This will be the greatest meeting the society has ever had, and you cannot afford to miss it. In addition to the regular business we are now preparing a splendid literary programme which will be instructive and interesting. Opticians who are not members are especially invited, and should bear in mind that they need have no misgivings about being 'dunned' for money. The financial status of the Indiana Society is such as to obviate all cause for uneasiness in this regard."

Pennsylvania Optical Society

At the regular monthly meeting of the executive committee of the Pennsylvania Optical Society the following were elected members: Charles Schwartz, 149 North Eighth Street, Philadelphia, Pa.; Joseph Hagerty, Sixty-Ninth and Haverford Avenue, Philadelphia, Pa.; Caesar Spiegler, Bethlehem, Pa.

Colorado State Optical Association

The Colorado State Optical Association held its regular monthly meeting on December 11th at the office of the president, Denver. A very large attendance was present. Besides the greater number of the Denver members, the society welcomed member W. W. Bostwick, of Longmont, Colo. Mr. Dauls, of Chicago, proved a very pleasant guest. The Columbian Optical Company, of Denver, contributed toward the good attendance by sending two of their young men from the work room as guests, and former-president, J. H. Gallup, was accompanied by his daughter, Miss Gallup

has just finished a course of optics in Chicago and has returned to take up refraction in the office of her father in Denver. Last, but not least by any means (and the cause for so large a gathering), was the presence of and lecture by Doctor Edward Jackson, that eminent authority on the eye, lately of Philadelphia, now of Denver.

Dr. Jackson's lecture pertained to prisms—the prescribing, grinding, adjusting and measuring was fittingly illustrated by his own drawings. All present were benefited by so strong a talk on the subject and returned a hearty vote of thanks to the doctor, with a general and cordial invitation to attend the banquet in January, 1902.

President Finch regaled the inner man in his usual bountiful manner, and all betook themselves into the winter midnight unmindful of the cold and snow after so delightful and profitable entertainment. The regular monthly meeting for January will be combined with the banquet to be given on the 11th.

A Unique Optical Catalogue

F. A. Hardy & Co., of Chicago, have just issued their annual catalogue for 1902, containing 176 pages, handsomely printed and carefully indexed and classified. It is rare that more information is given in such exact form, so well illustrated and so methodically arranged. The design of the front



cover, which we reproduce in miniature, is a gem of art in clay modeling by Artist Littlejohn, and suggests the lens grinder at work. The catchy feature of the interior of the book is the index, which shows the different departments, the index blocks being clearly defined in black. It is called the "dictionary style" of index, and will be found to be unusually handy. This is a catalogue that our readers will find it to their advantage to send for, as a great deal of technical information is conveyed, as well as the enumeration and description of the various lines manufactured and handled by F. A. Hardy & Co. Altogether, the new book is a publication worthy of the reputation of this well-known house. A copy will be forwarded on request.

"I could suggest nothing to improve *The Keystone*. I consider it almost perfect. The optical department is especially interesting."—J. E. Eckert, Jeweler and Optician, Marengo, Iowa.

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THAT
WE
ARE



EMBARKED

on the year 1902, we all take our usual look around to see what we are in need of. Whatever THE OPTICIAN is in need of he can find in our Salesroom.

Frames *and* Lenses

Chains *and* Hooks

Opera-Glasses *and* Lorgnettes

Clinical Thermometers

Eye-Shades *and* Eye-Protectors

Optical Books

The Hardy Ophthalmometer

Ophthalmoscopes, Retinoscopes

Spectacle *and* Eyeglass Cases

In short, if you want to celebrate the New Year by tearing out your whole establishment and starting in with everything fresh, you can get everything you want from us direct.

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is a Winner.

WARRANTED 12 YEARS.

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Our Prescription Department

is prepared for more business in

1902

than we had in 1901. It's always growing.
Send us some orders and you'll know why.

ALL WORK RETURNED SAME DAY
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**Tried the LASSO
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EASY TO FIT.

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USE
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New England Association of Opticians

The monthly meeting of the New England Association of Opticians was held at Young's Hotel, on the evening of December 17th. Walter W. Slade, having passed a satisfactory examination, was elected an active member. On behalf of the Optical Institute, Mr. Barton and Mr. Barron, reviewed the work done in the past few months. The present class of seven will graduate next year, and it is possible their diplomas may be conferred upon them during the meeting of the American Association, to be held in Boston next August. The address of the evening was delivered by George H. Brown, of Manchester, N. H., who spoke as follows:

Your president has asked me to say something at this meeting about the American Association of Opticians and its plans for elevating the profession. Now that this association will hold its convention here next summer it is undoubtedly true that many of our local opticians find a new interest awakened in the national organization. The first meeting was held in New York in 1898, the second in Rochester, N. Y., the third in Detroit, Mich., and the last in Chicago. I was out of New England when the first meeting occurred, but have been a member from the beginning, and have attended every meeting since the first. These meetings have been always well attended and enthusiastic. We have not always thought alike upon all questions, and the lively interest that has been developed at times has proven beyond question that we have all been in dead earnest, and that all were desirous of promoting the cause of physiologic optics. At least one of the questions that has been the most fruitful of debate has been in relation to who should constitute the active members. Some have contended that no one should be an active member who manufactured anything no matter how trivial, who did any prescription work, or who sold anything except at retail. Others, they contended, might become associate, but not voting members. On the other hand, it was said we need all the support that is possible from every man that is in any way connected with optics. We want the largest possible membership, and we believe that active members are more interested than mere voting ones. It is true, they have said, that the jobber, the dispensing and the refracting opticians' interests are not identical; but let us have the big organization that will give strength, solidity and momentum, and then let us have the "wheel within a wheel," representing those whose interests are identical. This, I confess, appealed to me as the better way, and whether so or not, anybody now upon the slightest pretext for being an optician, may become an active member of the American Association of Opticians.

Value of Organization

During all this time many State societies have been formed that are now in a healthy condition, and they are getting many good results aside from mutual acquaintance and good understanding. They never fail to be educational in a high degree. The society in a sense becomes the unit, instead of the individual, and it makes work easy both of an offensive and defensive character. In some cases opticians have been able to agree upon a uniform schedule of prices. This is a great step in the right direction. It, in itself, promotes good feeling even if only a minimum price can be agreed upon, and it is a great help to the optician's bank account. But aside from all this they furnish the foundation for a national or rather American Association, that I feel must be made the great organization that will give character to optometry. In New York, perhaps, the opticians have done as much toward feeling the public and professional pulse, in their effort to obtain State recognition as anywhere; and A. Jay Cross has always been one of the foremost workers. While he was president of the American Association of Opticians he felt that a National College of Optics should be formed within the organization, and if I may be permitted to say so, I think that he was not a little disappointed at the opposition that this recommendation received at Chicago. And yet I think the opposition came from misunderstanding and not from any hostility in a general way. In

fact, the entire meeting was anxious to place the whole thing in the hands of a special committee, with the implication that they would be expected to bring some feasible recommendation to the meeting here in Boston.

While I am not in the least discouraged at the results of our effort before the Legislature of Massachusetts, we did have a little experience that ought to be profitable to us, as showing the opposition that any measure of the kind will be likely to receive. Some one may say what is the use of making all this fuss? We have always gotten along well enough without recognition and legislation, and we can continue to do so. Why not let well enough alone? Now this would be true if our present condition was well enough, and if we had any guarantee that we could go on indefinitely as we are. On the contrary, I believe that one of two things will occur within the next decade. Either physiologic optics will become a recognized profession, or we will be legislated out of business. I do not fear the latter, because a large number of men are able now to occupy optometry as professional ground, and many more are fast qualifying. I believe that we are all ready to take our coats off and do the aggressive work necessary to obtain for our profession the place that is ours by every right. We may say that there are no chairs of optometry in any college, and consequently we are as well off in this respect as any class of men. That our methods of objective optometry are as good as the best. That we are familiar with optical pathology. That the functions of a lens in every sense are our A B C's. That we are perfectly familiar with optical neurosis and a lot of other things, and consequently we are all right. All these things are very favorable. If they were not true our chances would be small; for optometry as a profession demands knowledge along many lines. But to-day we face a condition, not a theory. Revelations in Kansas, in Minnesota and other States prove this.

The Condition That Confronts Us

The condition is this: We are engaged in a calling both honorable and essential. One in which optometry is our special province. Some of us adopted it as our life work many years ago. Of others the same thing may be said, and in addition, that they were born and bred into it by a parentage that has covered several generations. Our ranks embrace many naturally bright and capable men. Men who have been through the drudgery of qualifying, and whose technical and practical ability is of high order. Many of these men have obtained their knowledge in ways that would have been impossible to men of less ambition and persistency. I believe that it is but right that these men should become the alumni of some college with a large backing of men whose motive is above suspicion, and in whose honesty and intelligence there is no doubt. I believe we have this in the American Association of Opticians to a greater extent than in any State organization. I believe that the conferring of a degree upon such men as I have in mind, will not only be just to them but will help in bringing a worthy profession to State and national recognition. It does not matter how or where our graduates have obtained their knowledge. The only question that need concern us is: Have they the technical and practical knowledge sufficient to make them the worthy members of a great profession?

If the American Association of Opticians should next year decide to authorize a written examination similar to the examination of the medical men in Massachusetts, by their State board of regents, and if within a year twenty-five out of fifty men should pass a satisfactory examination, and obtain a diploma or certificate, it would create a nucleus for an alumni that would guard the interests of this educational board with jealous care. It would be but natural and fair that the standard for proficiency should be constantly raised, as it has been in other professions. Within a short time our board of regents will suggest a curriculum through the organs of our profession that will be of value to those who would qualify for this examination. They will make it plain in this way upon what lines they think the examination should be made. The establishment of a standard of known requirements, which can be done at our meeting here next summer, would enable the colleges of the country to know what, in our opinion, is essential (I mean the opinion of the American Association of Opticians), and they could, and I think would be very helpful to all applicants for the wider

knowledge that will be required by some, in order to take the examination. This proposition has the endorsement, or will have when it is understood, I feel sure, of nearly all of the leading refractionists of the country. It is feasible I believe. It is certainly within our province. It is something that we can do if we will, and if carried out as it ought to be, and as I think it will be, will make other things that we all agree should be done, more easy of accomplishment. The only thing that will prevent its adoption is the misconception and misunderstandings that sometimes creep into men's minds and prejudice them to the real merits of the case. I hope that this will be avoided next summer and that the matter will be so clearly stated and so well understood previous to our next meeting, that long and heated discussions may be avoided.

The Knowledge Necessary

You will naturally ask me what I think should be the requirements for this examination, and I am going to tell you frankly I think they ought to be very high. For the present, however, I believe that the examination should be technical and practical, rather than academic or literary in the narrow sense. Primarily the applicant for the next year or two should understand physiologic optics. He should understand the functions of a lens in every particular. He should understand frame-fitting in the broadest sense. He should know enough about disease to know a case of locomotor-ataxia from inebriety, and how certain disease may affect the index of refraction of the dioptric media. And he should know cases that are within his province and those that are not. I would not stop with these requirements, but they may be a suggestion of my ideas upon this subject. I would inquire what he would do and why, in certain cases of hyperopia, myopia and astigmatism, and how presbyopia would complicate these defects. I would have him say what he would do in certain cases of anisometropia. In fact, the success or failure of his examination would depend largely upon what he knew about lenses and adapting them to the human eye. My alumni would be men that would be sought and prized by those in need of glasses, as safe and capable men when their true worth was known. As I have said, personally I want the requirements for this examination to be high. There are some things, it is true, that some of the early graduates of this college may not possess, that will be required of its graduates ten years from now, when chairs of optometry have been adopted in our leading colleges; and we have those of our own with brick and mortar walls. But for the present I would put the practical knowledge of our best men who to-day are practicing in the field of optometry, against the larger theoretical knowledge of the graduates of future years; in the same way, that our large colleges confer a diploma upon those who have compassed certain scientific and literary subjects, as equivalent to certain other subjects that are embraced in some other course. In other words, I would for the present accept those men that are capable of doing as good work in optometry as new graduates of the medical schools are, after commencing their practice. This is what I call a high standard, and yet not a difficult one for a practical man to pass.

Support for the A. A. O.

I am very glad that the American Association of Opticians meets with us next year. This, in the nature of things, cannot occur very often. In 1903 the meeting will, most probably, go to St. Louis, that being the great jubilee year there. I am specially glad that Boston was decided upon for next year, because it is a natural center for a large attendance, and when a question of so much importance comes up, it should be at a largely attended meeting. I hope that every member of our local societies will join the American Association of Opticians as well as many others. We ought to be very glad to contribute at least the amount of our dues, which is \$2, every year, and it seems to me that we cannot feel much interest in our profession if we are not willing to give it this support. But one year is enough to talk about at a time. Let us all join in and attend the next meeting, and show that we in New England are among the most loyal and enthusiastic opticians to be found. I am confident that we shall do ourselves proud, and that Boston in '02 will be a record breaker.

It is very accessible from all Northeastern points, while New York and Philadelphia are near.

(Continued on page 105)

Faultless R Work costs you no more than the ordinary kind, but carries with it the prestige which invariably attaches itself to an article which is the best of its kind obtainable.

Quality, finish, style, accuracy and promptness characterize our work, and enable the competent judge to distinguish it from the ordinary kind. Send us your next **R** order.

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EYE-PROTECTORS

White, Blue, Smoke
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At this time of the year you will want a good supply of Colored Goods and Eye Protectors. We have a full line of Goggles, Driving Spectacles, Railroad Spectacles, Belt Eye Shields, Lamb Eye Shields, Rubber Eyeglasses, etc., etc.

Write for prices on our Frameless Eyeglass and Frameless Riding Bow, fitted with "OO" eye micoquille lenses.

Auto-Goggles in great variety.

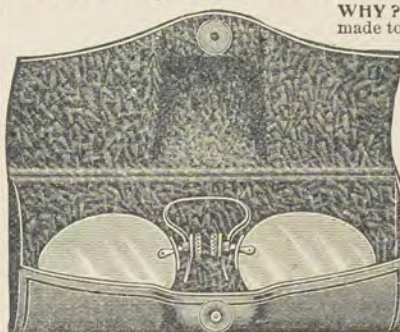
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"When you think of Cases think of Koenen"

WHY? Because our cases are neat and stylish. They are made to fit the glasses and they fulfill their mission. They will give satisfaction in every detail, PRICE and DURABILITY included.

MADE IN STEEL AND ALUMINUM MOULDS.



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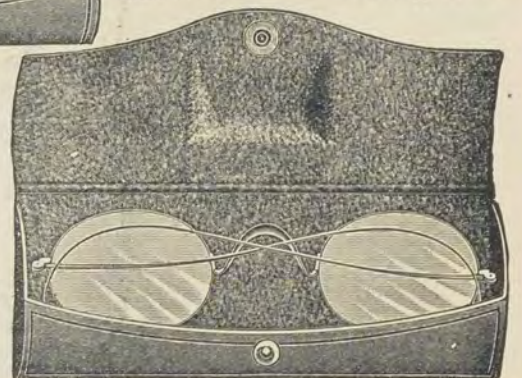
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No. 876 for Eyeglasses or small Riding Bows.
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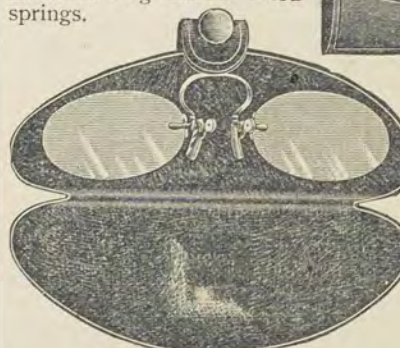
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The Clam-Shell Style is made in two sizes for offset eyeglasses; also with a high dome for long studs or tilted springs.



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New England Association of Opticians

(Continued from page 103)

We shall have a good representation from these places, but the Northeast must furnish the larger part of the attendance. At Chicago there were members present from Canada to the Gulf, and from New Hampshire to Texas. This will be the case at our next meeting, but long distances deprive many of the privilege of attending who would otherwise be on hand. As showing the value placed upon the meetings by some, I will say that I remember one man in particular, from Texas, whom I saw at Rochester, Detroit and Chicago, who said that he could not afford to stay away from any meeting, and he also said he expected to go to Boston next year. There is one thing that I want to emphasize. The convention did not come to Boston on account of any personal work which I did, but because of the general feeling that in the Northeast there was an enthusiasm for optometry as a profession, out of proportion with any other section, and that Boston was the place above all others for 1902. Let us keep our reputation bright. There was one thing that proved a great disappointment last year from carelessness on the part of nearby delegates. There was not railroad certificates enough to entitle the delegates to the one-third return fare, and this alone made my expenses about \$20 extra. This must not happen here, and would not in Chicago if those who lived nearby had taken the pains to buy a certified ticket. Many people living near such a convention, where the advantages of a one-third return ticket is of so little benefit over a trip ticket or a mileage, that in their indifference, haste or carelessness, they rob those of a considerable amount who make the largest sacrifice to attend. This, in itself, is a courtesy that we can guarantee our visitors with no expense to ourselves.

It was conceived in the purpose of a number of our ambitious opticians to strengthen and elevate the profession throughout the whole country without, perhaps, having any very definite idea of how this work would be accomplished. Our late lamented Mr. Sanborn, Mr. Barber and Mr. Wells were among the prime movers, I think.

A "Specialist's" Wonderful Evidence

Most of the States have protected their citizens by stringent laws regulating medical practice. Here and there, however, in the West particularly, isolated communities continue to suffer from quacks, but the number of such localities is growing smaller year by year.

As an example of the wisdom of passing the recent law regulating medical practice in Kansas the following extract from the court records is furnished.

The "doctor" whose testimony is quoted had posed as a "specialist" in the various small towns in Kansas for several years, and had enjoyed no little reputation and a most lucrative practice. In fact, in Montgomery County alone, it is stated, he had collected in cash in less than six weeks more money than all the other medical practitioners combined (four in number) for the whole year.

It was the "doctor's" misfortune to be summoned to court to give evidence in a case for damages, and this proved his undoing. His testimony is probably unique in "medical" evidence. Our readers will be specially interested in the knowledge he displayed of the human eye:

Q. I will ask you if you discovered any evidence of any nervous trouble? A. Yes, sir, I found him, what I considered, as a physician and surgeon, on a line where it might consist in very nervous prostration and engenderment of the brain, caused from asphyxia, for the simple reason that I noticed the eye being diluted.

Q. Doctor, what did you say you discovered with reference to his eyes, if anything? A. I found the pupil of the eye diluted—a nervous twitting; found that it followed him clear up; in an

examination for it, stripped his coat and found it went to the spine, and traced it as low down as his waist, if I recollect right; so I told him there was no use for me to look any further, the device it would take to bring him up that I didn't have there, and I didn't want to be at the expense of bringing them there; and absolutely refused his case, and didn't go no further with it.

Q. Now you said Mr. Lewis's eye was "diluted?" A. Yes, sir.

Q. Was it diluted with anything? A. Well, yes, I considered it diseased when I first seen the man; to be honest with you I thought he had mineral poisoning, because the pupil of the eye was diluted, and I noticed the right one was worse than the left one, if I recollect right; one of them was worse than the other.

Q. How is that "diluted" spelled? D-i-l-u-t-e-d, is that the way it is spelled? A. Well, now; I would not be sure at all, sir.

Q. Now, doctor, I wish you would tell me what are the different parts of a human eye? A. Pupil, cornea—that is two of them—of the eye?

Q. Yes, what else? A. Well, there are others.

Q. Can you name any others, doctor? A. Outer globular lining, and inner.

Q. Yes? A. Now, that is homoeopathic—I will just please state that; that is carried out on both lines.

Q. Is that all you can think of, doctor—all the names of the parts of the eye? A. Oh, there are others.

Q. But those are the only ones you think of? A. The idea of picking me up and asking me to turn around and spell those things off this way. These are all I can think of at the present time.

Q. Did you ever run across such a thing in the human system as an iris? A. Why, I have heard of such a thing, from a Latin standpoint.

Q. Well, where is that located? A. I don't wish to go any further and state.

The "doctor" proved equally well-informed on other parts of the body, the entire evidence

being most ridiculous. Yet, as has been said, this man was making more money than all the other physicians and surgeons put together in the county.

An Improvised Optical Room

Simon C. Levy, of 2314 Columbia Avenue, Philadelphia, Pa., who is gifted with both mechanical and inventive ability, seems to have solved a difficulty with which many jeweler-opticians find themselves confronted. Those of the trade who are refractionists as well as jewelers, and are constrained to attend personally to both branches of their business, not infrequently have to leave the jewelry store unprotected while attending to a patient in the optical annex of the establishment. Mr. Levy has avoided this as well as economized in space by a simple and inexpensive contrivance. The bent rod in the photograph marks the outlines of an optical room, momentarily formed by simply passing a curtain along the rod. The arrangement of the curtain, when in position, is such that the patient has complete privacy during examination, while Mr. Levy can see at the same time whether any one enters or leaves the store. When not in use the optical room becomes part of the store by simply drawing the curtain, and an advertising advantage in this is that the optical equipment is visible to all who enter the store for whatever purpose, and naturally arouses curiosity and interest. The instruments impress customers and prove a good advertisement for the refraction end of the business. The accompanying photograph explains the arrangement, which may prove a useful suggestion for many of our readers.



A Convenient Optical Department



Successful Opticians' Murine Testimony

Dr. James Madden, Chicago, Optician, says of **MURINE**: "I have practiced as an optician for 22 years, and of all Collyriums used I have had the best results with **MURINE**. **MURINE** makes a proper correction possible in many cases where satisfactory results could not be obtained otherwise, and particularly in cases where an 'ocular reflex' is present."

Prof. Solomon P. Kent states: "I have been a Refracting Optician for over 25 years, and can say that since I have become acquainted with **MURINE EYE REMEDIES** I have had greater success than ever before, as I have been able to successfully fit many cases that had formerly been unsatisfactory. My patients all over the United States become strong believers in **MURINE**. Every optician should supply these remedies to his patients."

Mrs. A. L. Gilmore, of Randolph, Wis., writes to Dr. T. A. Jones, Eye Specialist and Optician: "I received my glasses Wednesday, and I thank God every day for His goodness in sending you to this place. I have suffered so much pain in my head and eyes, but since you gave me the **MURINE** and **BANENE** I have not been troubled with those 'floating spots' nor the pain. It is such a relief. Tell people that I say that these remedies are worth \$5.00 per bottle to any one whose eyes trouble them."

We invite Opticians to send for our booklet on **BANENE**

BANENE Cures Floating Spots, Stimulates the Circulation, Absorbs Cataract.

This remedy taken internally, with **MURINE** used in the eye, will remove spots that seem to be floating before the eyes. It will relieve a heavy feeling in the eyes and clear the retina of any congestion.

Prepared in the laboratory of the **MURINE EYE REMEDY COMPANY, Chicago**

Sold by Jobbers Everywhere

MURINE IS USED BY THE
BEST EYE SURGEONS
AND IS WHAT
YOUR
EYES
WANT

**2
DROPS
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A REMEDY FOR THE
PEOPLE, SAFE & PLEASANT
IN ITS APPLICATION.

Murine

Tones the eyes.
Cures red eyes.
Cures red eyelids.
Cures overworked eyes.
Cures children's eyes.
Cures inflamed eyes.
Cures scales on eyelids.
Cures itching and burning.
Cures discharging eyes.
Cures ulcers on eyes.

Northern Illinois College of Ophthalmology and Otology

THE GREAT OPTICAL TRAINING SCHOOL

MASONIC TEMPLE, CHICAGO, ILLINOIS

George W. McFatrich, M. D., Secretary

ESTABLISHMENT

This school was established in 1872, and in 1895 it was chartered under the laws of the State of Illinois. No law can ever abridge the right of its graduates to practice optometry.

METHODS OF INSTRUCTION

The great feature of the school is its **objective methods** of imparting knowledge. Students are taught what things are by seeing the things themselves. All principles are illustrated objectively to them.

CORRESPONDENCE COURSE

Students are privileged, and we usually recommend them to take correspondence work first. They may then attend and review the course at any convenient time, though many find attendance unnecessary.

TIME

The time required for a correspondence course is usually from six weeks to three months; for an attendance course, from three to four weeks. But students are privileged to get through in as short a time as possible or lengthen this time at will.

DEGREE CONFERRED

The Degrees conferred successively are as follows:
Doctor of Optics. Master of Ophthalmology.
Bachelor of Ophthalmology. Doctor of Ophthalmology.
Degrees must be earned before being conferred.

FACULTY

The faculty of the school is composed of twelve instructors, experts in their respective lines, who lecture regularly before the students according to a fixed schedule of time and subjects, and who sign all diplomas.

COURSE OF INSTRUCTION

The course of instruction is exceedingly practical—just what the optician needs to do accurate fitting by the most improved methods and to know what he is about all the time.

PRACTICE WORK

Students are taught practical fitting by actual drill in fitting. A Free Clinical Department and a Practical Fitting and Sales Department perfect the student in every practical feature of the optical business.

ATTENDANCE COURSE

This brings the student in absolute contact with his professors and gives him the opportunity to prepare himself with others pursuing the same work. He gets the benefit of practical demonstrations of all points he does not understand and experience in actual fitting by the best methods and with the best equipment.

TERMS

The Tuition Fee for a Life Scholarship is \$25.00, which entitles the matriculant to all privileges—correspondence or attendance, or both. The fee is payable in advance.

DIPLOMA

Every graduate receives an elegantly engraved diploma conferring the Degree of Doctor of Optics. Those who are awarded the advanced degrees receive special diplomas conferring such degrees. All diplomas are signed by the full faculty.

ALUMNI ASSOCIATION

This is an association of graduates. It holds regular annual meetings, at which members are given an opportunity to demonstrate their knowledge and skill, as well as to receive advanced instruction. Upon their work in this association the title of the graduates to advancement and higher honor chiefly depends. It is a test not only of their technical proficiency, but of their practical qualifications.

FACILITIES AND EQUIPMENT

To conduct such a school, give such a course, provide so thorough a system of technical training, raise the profession above the level of a trade or craft, a most complete equipment and the most abundant facilities are necessary. In this respect, as in all others, the Northern Illinois College is the greatest optical school in the land.

WRITE FOR OUR 1902 ANNOUNCEMENT, JUST PUBLISHED



Optical Notes

✱ Dr. M. De Hes, who returned recently from a trip to Europe, has opened optical parlors at 211 Grand Avenue, Milwaukee, Wis.

✱ W. H. Hurlburt, formerly with the Providence Optical Co., of Providence, R. I., is now in the employ of the American Optical Co., of Southbridge, Mass.

✱ The annual meeting and banquet of the Illinois Optical Society will be held in Chicago February 4th. An attractive programme will be arranged and a record-breaking attendance is expected.

✱ B. Mayer, manufacturer of optical goods, 550 Gay Street, Baltimore, Md., announces that his salesman, Mr. Hare, will call on the Southern trade during the month of January with a new and full line of optical goods.

✱ Leonard Krower, of New Orleans, La., has added to his business an up-to-date optical plant for grinding and the filling of prescription work for the trade only. L. O. Thompson, who is well known throughout the optical trade in the South, will have charge of the department.

✱ The employees of E. Kirstein Sons Co., manufacturing opticians, Rochester, N. Y., held their annual dinner in the Spiehler Building, on December 23d. Music, dancing and toasts were the principal features of the entertainment, which was one of the happiest and most successful in the history of the company.

✱ Rees Bros., of The Rees Bros. Optical Co., 242 W. Commerce Street, San Antonio, Texas, have dissolved partnership. Chas. S. Rees, the senior member of the firm, has opened an optical store at 325 W. Commerce Street, under the firm-name of "The Ajax Optical Co." Together with the latest grinding machinery and scientific appliances the store is also equipped with a dark room.

✱ The Hub Optical Case Co., Boston, Mass., has just completed and has ready for the market a new case that is specially adapted to take the modern eyeglass that has an outset as well as an offset. The case has a hump on both sides and allows the eyeglasses to be held in such a way as makes it secure from the danger of crushing the lenses or spoiling the most delicate adjustment to the frame.

✱ The Munroe Optical Co., of Rochester, N. Y., have added to their staff of officers, as vice-president, Ivan Fox, of the Fox Optical Co., Philadelphia. Mr. Fox is a large stockholder in and also a director of the Munroe Company, a branch of which has been opened at 42 South Eighteenth Street, Philadelphia, in charge of Mr. Fox, who will also superintend the affairs of the company in the Eastern States.

✱ A professional looking gentleman, who claimed to be from Turkey, and an expert oculist, disappeared last month from Kent, O., where he had been practicing refraction for several weeks. His present whereabouts are unknown. He had a branch office at Ravenna, O. When last seen at Kent, he said he was going to Cleveland, O., on business. He had secured many loans in Kent, and is muchly wanted by confiding friends there.

✱ The class of the Northern Illinois College of Ophthalmology and Otology, Chicago, had the pleasure of listening to J. T. Brayton's exposition of the De Zeng refractometer one class hour in the December term. Mr. Brayton, who represents the Chicago office of the Julius King Optical Co., is an

interesting talker on any optical topic, and especially the De Zeng refractometer, which is a favorite instrument with him. The management of the College are engaged in preparing the new 1902 announcement of the school, which will appear about January 1st.

✱ The annual meeting of the Alumni Association and reunion of the graduates of the Philadelphia Optical College will be held in May, 1902. The exact date, as well as the details of the two days' programme, will be announced later. In the fall class in attendance at this college were the following: Dr. James M. Dean, Washington, D. C.; M. J. D. Jackson, Hegins, Pa.; Miss Alice G. Heyer, Wilkesbarre, Pa.; Morris M. Goldstein, Atlantic City, N. J.; John C. Siggins, M. D.; Ralph Bernstein, M. D., and Joseph E. Winner, Philadelphia, and J. H. Fetzer, Coopersburg, Pa.

Optical Profession in Great Britain

Our readers will be interested in the amount of optical information requisite to obtain the diploma of the Worshipful Company of Spectacle Makers, of London, England. An idea of the information necessary is found in the following examination paper set at the latest examination of the company:

Not more than four questions in each group, A and B, are to be attempted. Time, 3 hours.

A.

1. State the laws which govern the refraction of a ray when it passes from one medium to another. Illustrate your answer by a sketch showing how a ray of light will be refracted under the following circumstances: It falls obliquely at 45° upon the surface of a layer of olive oil, half an inch thick, floating on water. The mean refractive index of oil being 1.47, that of water 1.33.
2. Parabolic mirrors are preferred to mirrors of spherical curvature for certain optical purposes. What are the properties of the parabolic curvature which are of so much value in reflecting light? Mention also some of the services for which parabolic mirrors are used?
3. A plano convex lens of $+6$ D. power and a plano-concave of -6 D. are taken. What will the optical effect of these lenses be if they are put together as in the following cases: (1) With their curved faces in contact; (2) Back to back with their flat faces in contact; (3) Back to back but with a distance of $\frac{1}{2}$ in. between them.
4. Find the curvature of the second surface of a spherical lens, the first surface having a radius of 12 cm., the focal length being 30 cm. and the index of refraction being 1.6.
5. In using a plano-convex lens to produce an image of a distant bright point it is found that the definition of the image is better if the curved face is towards the object than is the case if the flat face is turned in that direction. Give a careful explanation of this fact.

B.

6. What is the meter-angle? Has it a constant value, or on what does its value depend? What single prism of ordinary notation would cause a similar deviation of the eyes to a one meter-angle convergence?
7. Describe Listing's reduced eye. What are the constants to be remembered in order to work out a calculation of an axial beam of rays falling on the retina?

8. What are the optic properties of crown and flint glass respectively? How would you distinguish between them? Are there any advantages or disadvantages in combining the two, in order to make an achromatic glass for a person requiring cataract lenses?

9. A person requires

$$\begin{array}{rcl} R. E. & +4 D. S. & L. E. +1.25 D. S. \\ & -6 D. C. ax. 180^\circ & +3.5 cyl. ax. 90^\circ \end{array}$$

and they require to be decentered in order to obtain the effect of a 1° prism base up. How can they best be decentered? Find the number of millimeters each requires to be decentered?

10. How can you ascertain the refraction of an eye by means of a stenopaic slit? Under what conditions can it be used to assist vision?

British View of "Physiologic Optics"

Dr. Tscherning has given us one of the most delightful text-books on physiologic optics that we have yet seen. He is a scientist and an ophthalmologist of considerable ability, and has had one of the most brilliant careers in that science that generally falls to the lot of a comparatively young man. His name may possibly be known to English readers, especially of late, by the new ideas connected with the theory of accommodation as differing from the historic and usually accepted one of Helmholtz. In this work first published in 1898 in France by A. Maloine, of Paris, Dr. Tscherning has presented to the optical world a volume which, thanks to the translation and revision of Dr. Weil-and, will prove not only charming and interesting reading, but after that is accomplished will receive an honored place as a work of reference on the shelf of every ocular library in the English-speaking world.

The first portion is a recapitulation of what is generally known as ocular dioptrics, and contains brief paragraphs on the principles and constructions of lenses and the optic system of the eye. Under this heading the author enters rather deeply into ophthalmometry from an optical point of view. There are in connection with this some extremely interesting diagrams on keratoscopic images of the eye.

—*Dioptric and Ophthalmometric Review.*

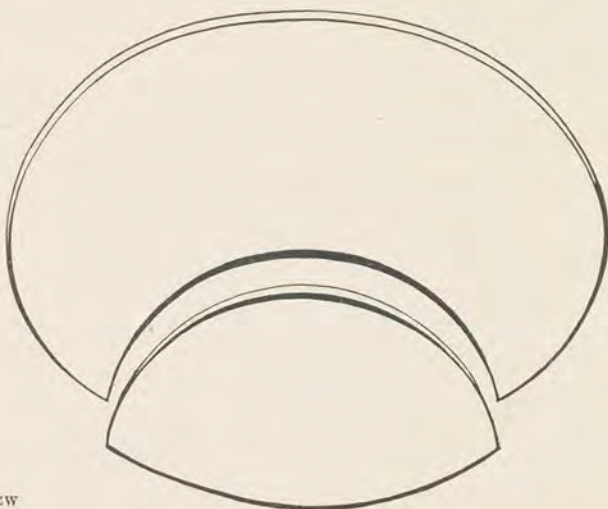
British View of "Ophthalmic Lenses"

To many persons, it will only be necessary that we state a new book for opticians has been issued by Mr. Chas. F. Prentice, through THE KEYSTONE, price \$1.50 (6s. 3d.). For the sake of others who are less familiar with the high character of the optical manuals published by our contemporary, we may add that the work embodies no less than 110 original diagrams by Mr. Prentice, whose unique work in connection with formulæ for the more complex transpositions of ophthalmic lenses has been referred to by some of our ablest mathematical opticians. The diagrams are eminently instructive, and are accompanied by tables of an exhaustive character to assist the optician in making transpositions. Students of optics, both elementary and more advanced, may learn much from a perusal of many portions of this treatise; and no progressive optician, deeply interested in his calling, would be without a copy of it in his library. Quite the same thing, and indeed yet more, can be said of THE KEYSTONE's lately published translation of Tscherning's "Physiologic Optics."

—*London Optician.*



SECTIONAL VIEW



This beautiful box contains two dozen pairs of the Johnston Automatic Grooved Perfection Bifocal Lenses (two dozen reading and two dozen distance). To any customer ordering two dozen or more of these lenses we will send a box gratis.

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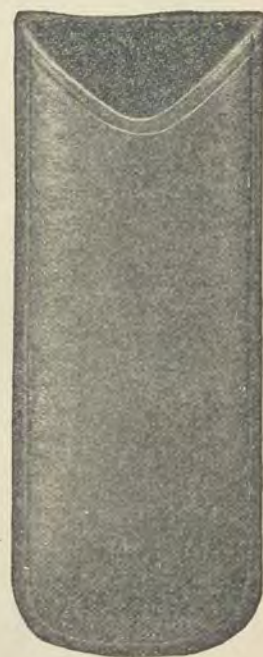
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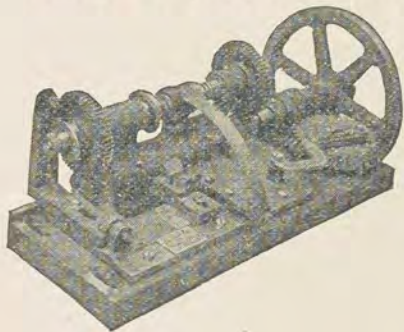
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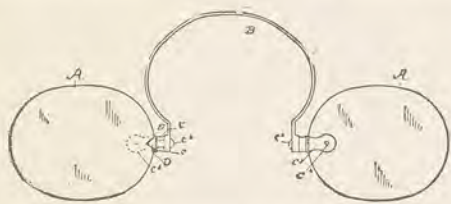
Wholesalers of Optical Goods

Optical Inventions

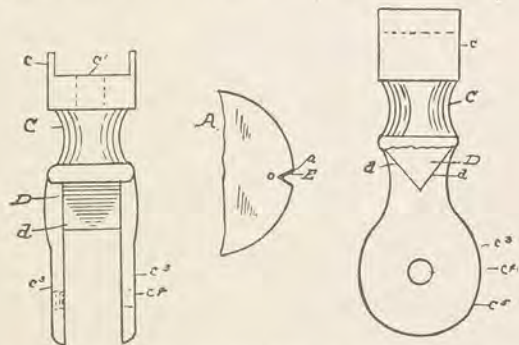
The following list of recent optical inventions was specially prepared for our columns by William F. Hall, Patent Attorney, Equitable Building, 1003 F Street, N. W., Washington, D. C.:

688,428.—Granted December 10, 1901, to Charles L. Merry, of Kansas City, Mo., relates to a stud attachment for rimless eyeglasses.

This invention is designed to afford an accurate conjunction of the stud and lens and to avoid the breaking of the lens from undue expansion of the connecting parts. As shown in the accompanying



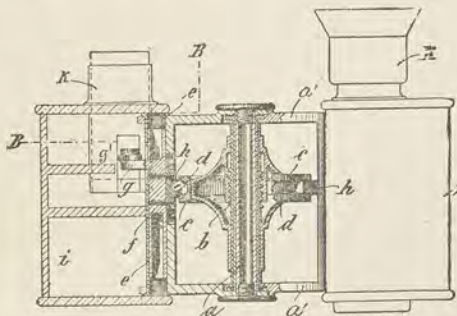
illustrations, the invention includes a post having a part connected to the nose strap and a fork portion formed of flat plates, between which the edge of the lens is adapted to be clamped. Extending from the main portion of the post in between these plates and with its apex in alignment with the



longitudinal axis of the lens is a wedge block, which is designed to fit into a V-shaped notch in the edge of the lens. This notch is provided, preferably, with a packing of yielding material, such as soft lead or rubber. The nick or notch being larger than the wedge, the fitting parts of the wedge upon the soft packing will displace the packing to accommodate itself to the variances in the width of the former.

687,373.—Granted November 26, 1901, to Carl P. Goertz, of Berlin, Germany, relates to an improvement in focal adjustments for binocular optical instruments.

This invention is intended to permit of the simultaneous adjustment of the lens tubes in their axial direction in that class of instruments in which the distance of the lens tube is variable. As illustrated, the prism telescope consists of two tubes *i*,



within which the short tubes *k* containing the oculars slide. Upon the spindle to which the tubes *i* are pivoted a peripherally grooved traveling disk is mounted, and in each tube *i* a sliding bar *f* is provided, having a projection engaging in said groove and an oppositely arranged projection *g* connected

to the tubes *k*. On the disk *c* being turned, it moves upward or downward upon the spindle and through the connections referred to; the guide bar *f* and the eye tubes partake of a like movement.

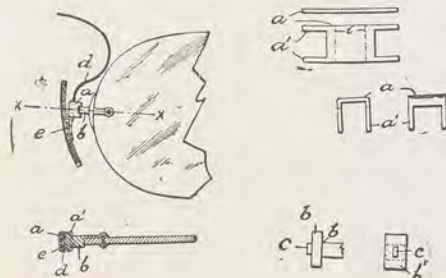
689,262.—Granted December 17, 1901, to Daniel E. Weston, of Philadelphia, Pa., relates to an improvement in nose clip for eyeglasses.



This invention relates to a nose guard for eyeglasses, having as the means for attaching the same to the frame of the glasses a single piece of flexible material with free ends formed into individual loops capable of separate adjustment. The material shown herein consists of a single piece of wire *D*, bent to form the individual loops *d d'*, which lie in different planes and which present a corrugated outline.

688,550.—Granted December 10, 1901, to Jacob C. Schmidt, of Lebanon, Pa., relates to an eyeglass fitting.

This invention relates to means for securing the spring and nose guard to the post in frameless eyeglasses. The invention includes a post having a



T-head with a pin *c* projecting from the face thereof. The end of the spring *d* and the nose guard *e* are provided with holes to receive said pin and through which said pin extends when the parts are assembled. The parts being thus placed, a clamp plate *a*, having end projecting forks *a'*, is bent around the head of the post, said forks passing over the stem portion *b* of the post. This plate serves to firmly clamp the parts together.

Both Sides of the Case

ED. KEYSTONE:—On page 1433 of the December issue of your journal appears a report of a meeting of the Minnesota State Board of Optometry, in which, regarding membership applications, it is recorded that "one member was refused registry because he was not a resident in the State." I presume this refers to your humble servant, for about October 6th I sent an affidavit with the fee of \$3. The affidavit stated that I was practicing optometry in Placerville, Cal., previous to the date provided by law. I also wrote a letter stating that I held a diploma from the South Bend College of Optics, and that I had previously practiced optometry in St. Paul, Minn., for years. The money-order was returned to me accompanied by a curt note, intimating that I should attend an examination in Minneapolis, October 17th, and pay a fee of \$15. Now, I may say at once that I have little respect for the blockhead who drafted that law. Manifestly it is glaringly unconstitutional and unfair, because it "passes" those already in the "ring" without examination (and, I believe, with little regard to their fitness) for the very small fee of \$3, while a person who happened at the time of the passage of the law (?) to be outside the State must pay a fee of \$10 on application for examination, and \$5 on receipt of the certificate, no provision appearing for a refund of the \$10 should the applicant not qualify. Moreover, the nature of the questions propounded and the manner of asking them are entirely at the discretion of the "ring." Had the requirements been such as to require all candidates to be examined with the same set of

questions, under the same conditions, each paying exactly the same fee, I should have nothing but commendation, both for the law and its framers; but to admit a number of poor applicants, as some of them must have been (judging from the questions and answers which appear in the report referred to), at a nominal fee and charging an almost prohibitory amount to outsiders makes of it a contracted monopoly. I have even been told by one who was admitted, that he had to get his attorney to interview the board before they would give him a certificate. I am not personally acquainted with any member of the board, and do not, therefore, write in a spirit of vindictiveness; indeed, my sole object is that the "craft" may know exactly how things are done by our "board," for the law (?) was undoubtedly the work of members of the Minnesota Optical Society, and in its present condition it looks as if they were obliged to have it framed in a manner that would enable them to get in.

Yours for justice,

D. E. HARDY.

864 Payne Avenue, St. Paul, Minn., Dec. 9, 1901.

THE KEYSTONE representative had an interview with C. A. Snell, secretary of the Minnesota State Board of Optometry, in regard to the substance of Mr. Hardy's letter. Mr. Snell said:

"Mr. Hardy is laboring under a misapprehension; first, in that he concludes that he is the party referred to in the article in the December KEYSTONE; it was another party, his name not coming before the board at the November meeting at all; second, wherein he states that the law is 'manifestly and glaringly unconstitutional.' We were advised by the highest legal authority in the State, at the time we were working for its passage through the Legislature, that it contained nothing that would conflict with the constitution of the State, in his opinion.

"In regard to the law itself, those who were instrumental in framing it were at all times conscious that they were not securing such a law as it was desirable to obtain, but with that knowledge they were also conscious that other opticians in other States had attempted to secure optical laws and failed, because they had attempted to secure too much, so we made the effort to secure as much as possible, with all the varied interests and conflicting opinions to contend against, and the fact that we succeeded should be a cause for congratulation rather than complaint.

"Such a provision as Mr. Hardy mentions as requiring everyone to take an examination, was an impossibility, and therein he shows his lack of information. Anyone who looks upon a fee of \$15 as almost prohibitory, cannot have been very successful in the profession. If Mr. Hardy is so efficient as his letter to you implies, he ought not to anticipate any trouble in taking an examination. Let him combine with the rest of us and work for the perfecting of the law as time and opportunity will allow. I invite him to take the opportunity to get acquainted with the members of the board, and I am sure he will gain a more favorable opinion."

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—Adv.

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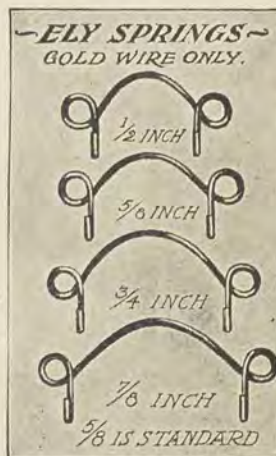
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Hints on Focusing

Few amateurs focus scientifically as there is usually so little attention given to the subject of optics in study of photography, writes an expert in one of the photograph publications. The majority of lenses possess to a certain extent the defect called "spherical aberration" which causes the rays of light that pass through the edge of the lens to focus nearer than those that pass through the center. It is also a well-known fact that objects at a distance come in focus with the lens nearer the plate than does an object in the foreground. The focus of a lens in inches, is the distance from its center, to a point where parallel rays passing through the lens will converge to a point; as shown with a burning glass which receives the parallel rays from the sun on one side and converges them to a point on the other at a distance from the lens equal to its focal length.

The use of diaphragms in front of a lens is resorted to, to cut off the rays of light that pass through the edge of the lens and focus nearer than the center of rays.

Diaphragms, therefore, sharpen the outlines of the image on the plate. The rays of light that pass through the center of the lens are nearer parallel than those that pass through the edges and, therefore, all come to a focus nearer the focal length of the lens. This uniformity of focus also gives a sharpness to the picture, therefore, with a small stop the distant mountain is as clear and distinct as the foreground shrubbery, which is seldom a desirable condition. Now with the full opening of the lens suppose we focus our picture to secure sharpness of outline at the edges of the plate only (as that is where the foreground is impressed), and then stop down until the desired sharpness is obtained in the foreground only, using the largest diaphragm possible. Give a liberal exposure and develop. The resulting picture should show the trees and shrubbery in the foreground in clear and emphatic outline, while the distance is hazy and indistinct, owing to its lack of sharpness and over-exposure. The perspective of the picture is thus very materially improved, and the stops intelligently used become as important an element of the photo-

graphic process as the lens, the plate and the developer.

Many amateurs complain that their lenses do not define sharply with full opening, at the edges of the plate. This is not true. If the focusing screen is moved properly the edges will be in focus and the center of the plate will lack sharpness. Don't always study sharpness in the center only. For portrait work it is necessary that the center should be sharp and the edges somewhat vignetted, while in nearly all landscape work, it is desirable that the edges should be sharp and the center somewhat hazy, especially if there is distance. In architectural work the whole plate must be sharp, hence an especial lens is generally used, and there are cases in portrait work where a most pleasing effect is obtained by a slight indistinctness of the whole picture. I recall the portrait of a young girl, exhibited at a recent convention, where the effect from across the room was a most delightful one, but as you approached the picture the outline gradually dissolved and the vision apparently vanished when approached too near.

—Photo. Era.

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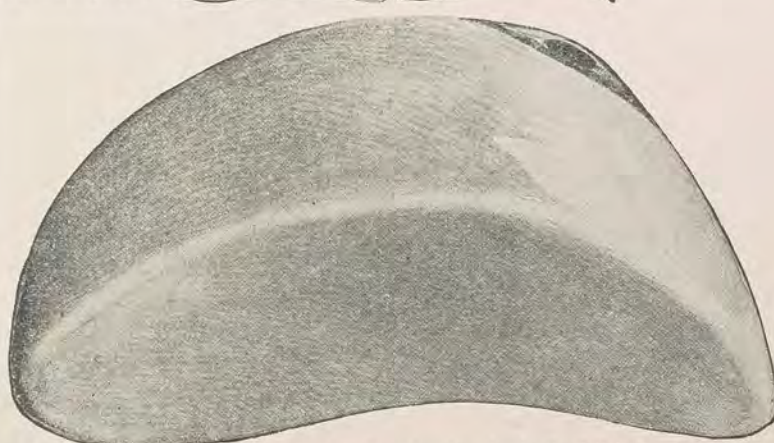
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Life-size illustration
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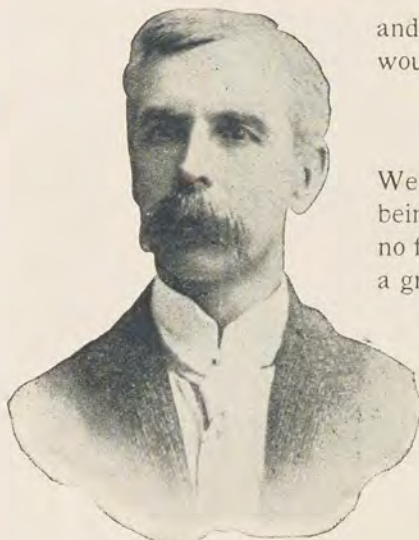
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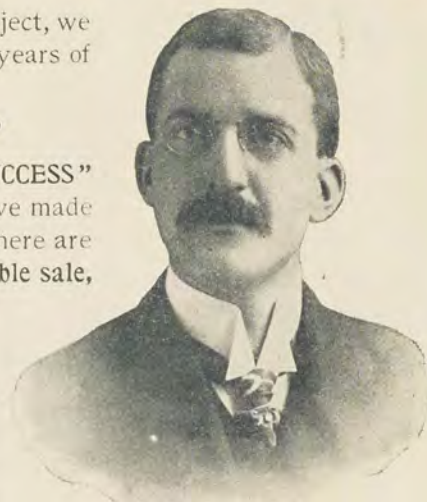
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H. E. Espenshied, New Philadelphia, Ohio. 3 sales.	W. C. Kline, Elwood, Ind.	E. S. Haines, Joplin, Mo.
J. I. Strouse, Monongahela City, Pa.	W. E. Mount, Elwood, Ind.	F. P. D'Arcy, Kalamazoo, Mich.
A. C. Fawcett, Xenia, Iowa.	The Anderton & Eberhart Co., Dayton, Ohio.	Stevens, Wallace & Co., Chicago, Ill.
C. A. Peabody, Plymouth, Ind.	L. D. Rosenkranz, Oconomowoc, Wis.	French Importing Co., New York City, N. Y.
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The Murray Jewelry Co., Miamisburg, Ohio.	J. M. Smith & Co., Bloomington, Ind.	Albert Wevabasky, Peekskill, N. Y.
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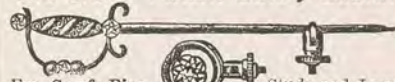
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19th & Brown Streets, Philadelphia, Pa.

SITUATIONS WANTED.

Under this heading, ONE CENT per word, for first twenty-five words. Additional words and advertisements, THREE CENTS per word. No advertisement inserted for less than 25 cents.

BY a young man, 26 years of age, single, no bad habits, to do watch work, jewelry repairing and plain engraving; graduate optician, with test case, good lathe and tools. Best reference. Address, Chas. S. Boicourt, Madison, Ind.

DEFRACTIONIST, frame fitter, A1 salesman. No bad habits; one who will command the respect of your trade and increase your business. Ref. exchanged. Will accept position on trial. "H 7," care Keystone.

FEB. 1st. Plain watch, clock and jewelry work. Age 27; own lathe and tools. Wages moderate. New York or Pennsylvania pref. Lock box 4, Pulteney, N. Y.

YOUNG man, watchmaker, jeweler and first-class salesman, wants steady position as buyer and salesman and do the optical work. Best recommendations. "S 2," care Keystone.

BY an expert watchmaker, good mfg. and jobbing jeweler, graduate optician. Own full set of tools, 15 years' exp. at bench. Refs. gilt edge. Or would take the right kind of a place on commission. "S 1," care Keystone.

YOUNG man, 21, good habits, good address, 2 1/2 years' exp., desires position as second man after February 1st. Best refs. Furnish small tools. Walter A. Coffman, Warsaw, Ohio.

WATCHMAKER, first-class jobber and clock repairer and experienced salesman of upright character, with best ref., desires to change position on or after Feb. 1, 1902. Address, "W. C.," care J. W. McVine, Gardner, Mass.

ENGRAVER.—Young man desires a permanent position as letter and monogram engraver. Address, A. S. Hulse, No. 19 Fort Greene Place, Brooklyn, N. Y.

EXPERT refractionist wishes position in Philadelphia. A1 refs. given. Address, "J. C. W.," 2941 Girard Ave., Philadelphia, Pa.

BY expert mechanic on complicated French, electric and other makes of clocks; 11 years' exp.; single, age 28. Care Star Optical Co., Bethel, N. C.

WATCHMAKER, jeweler, salesman and graduate optician. Own tools; \$15 per week. Lock box 446, Goshen, N. Y.

OPTICIAN, skillful and accurate in fitting glasses, desires a permanent position with reliable firm. Have own optical instruments, fair knowledge of jewelry business. "E 2," care Keystone.

BY first-class salesman, a jewelry or optical line for Ohio, West Virginia and Virginia. "P 1," care Keystone.

PRACTICAL watchmaker, jeweler and optician wants position as salesman and optician and helper in all branches. Been in business 20 years. Could take charge of store. Age 40. Address, Lock box 12, North Creek, N. Y.

YOUNG man, 4 years' exp. on watches, clocks and jewelry, wants position as second watchmaker and salesman in retail store. New York State. Refs. "D 1," care Keystone.

WATCHMAKER, optician, good jewelry repairer, good salesman, good address, sober and good appearance; American. Wishes to make a change; position permanent. "D 2," care Keystone.

BY a thoroughly competent watchmaker on fine adjusted watches. Good set of tools, A1 ref. Ad., "Watchmaker," lock box 17, Pulteney, N. Y.

EXCEPTIONALLY fine watchmaker, all-around mechanic. Complete set of tools; best ref. State salary. "D 4," care Keystone.

PERMANENT position by watchmaker, jeweler and engraver. Full set of tools, 20 years' exp. Middle aged, married; wages reasonable. C. H. Bryan, Dysart, Iowa.

(Continued on page 118)

You can't do two things at a time

Don't spend on bench work the time that can be more profitably bestowed on the mercantile part of your business. Repairing is one business; making a jewelry store pay is another. Our business is repairing, and we can do your work to give you a good profit, while your hands are left free to attend to matters which are vital in these days of sharp competition.

Send for our Trade Repair Price-List.

Ezra F. Bowman's Sons

Watch Repairing, Engraving and Jewelry Repairing for the Trade

LANCASTER, PA.

SITUATIONS WANTED.

(Continued from page 117)

PRACTICAL watchmaker, plain engraver, graduate optician, good salesman. Young man, age 22; 3 years' exp.; best ref. South pref. G. C. Gill, Homer, La.

AN A1 watchmaker, engraver and optician will be open to an engagement after Jan. 15, 1902. Young man who can give satisfactory refs. Address, "Smith 42," room 811 Columbus Memorial Building, Chicago.

HONEST jewelry salesman wishes position in store in Philadelphia, Pa. Refs. given. Address, "J. C. W.," 2941 Girard Ave., Philadelphia, Pa.

IN the North, by first-class watchmaker, salesman and fair optician. Good, all-around man; thoroughly reliable. Demand good salary. Single; have tools. Box 303 C, La Porte, Texas.

BY first-class watchmaker, optician and salesman; good, all-around man, thoroughly reliable. Demand good salary. Single, have tools. "F 2," care Keystone.

FIRST-CLASS watchmaker and good optician desires a permanent position with first-class house. "E 1," care Keystone.

FIRST-CLASS watchmaker, jeweler and engraver wants pleasant, permanent position. 20 years' exp.; fine workman; married man. "H 2," care Keystone.

PERMANENT position by doctor of refraction, graduate of 3 of the best optical colleges in America; 6 years' practical exp.; thoroughly understands the jewelry and optical business. Own latest ophthalmometer, refractometer, ophthalmoscope, trial case, etc. No bad habits, good appearance. Ref. exchanged with first-class house. "R 1," care Keystone.

POSITION by competent optician, who thoroughly understands refraction and frame fitting, with good, reliable firm on Pacific coast. "B 1," care Keystone.

GOOD man wants situation—watchmaker, jeweler, optician; 25 years' exp. Lathe, tools, trial case. Good appearance; gift ref. A. L. Gark, Richmond, Mich.

WATCH, clock and jewelry repairer, 28 years' exp. 42 years old, married. Permanent position, best of ref. Satisfaction guaranteed; state wages. J. G. Carnahan, Oxford, Ind.

BY young man, 21 years old, 2 years' exp. Can do plain watch work, clock and jewelry repairing; good salesman; good refs. "C 121," care Keystone.

AFTER Jan. 15th, by A1 watchmaker, jeweler and a fine engraver; 3 years as a railroad watch inspector. A. E. Wananen, Bessemer, Mich.

WITH experienced man to finish trade. By good watch, clock and jewelry repairer, 3 years' exp. Own tools. 24 years old, good habits; anxious to improve. Good refs., Iowa pref. Address, Lock box 50, Glen Elder, Kans.

BY capable watchmaker, jeweler, engraver, salesman, April 1st. Some knowledge of optics. 12 years' exp.; full set tools. Tennessee, Kentucky or Virginia. "A 71," care Keystone.

BY young man. Have taken course in one of the best horological institutes in the West. Can do satisfactory bench work, fair engraving; have taken a course in optics. For particulars address, J. E. Smith, box 139, Gering, Nebr.

BY young watchmaker, engraver, jeweler and clock repairer. Has had 2½ years' exp., and has good tools. "M 128," care Keystone.

AT once, by married man, 29. Practical watchmaker, French clock repairer. A1 salesman; 12 years' exp. Nice set of tools, refs. "W 136," care Keystone.

AT once, by first-class watchmaker, jeweler, optician (graduate 2 schools) and plain engraver. Own tools and trial case. Will start at \$15. Wisconsin or near pref. "T 95," care Keystone.

WATCHMAKER and salesman, 25 years' exp. on fine and complicated work. Tools and refs. "Watchmaker," 840 W. Fayette Street, Baltimore, Md.

A1 WATCHMAKER, engraver, graduate optician, experienced on railroad watches; good appearance, no bad habits; own all tools. Photo., A1 ref., 18 years' exp. \$19 per week. Must be within 500 miles of Chicago. "Jeweler," care L. Houghton, 22 Hamilton Ave., Chicago, Ill.

BY optician of 10 years' exp. in all branches of the optical business; capable of managing shop or store. Address, "Ernest," room 811 Columbus Memorial Building, Chicago.

WATCHMAKER, optician, jeweler, plain engraver. Has own tools and test case; 20 years' exp. A1 refs. Address, P. O. box 25, Marshfield, Wis.

WATCH, clock and jewelry repairer desires position. Single, good habits and best of refs. Address, "H 3," care Keystone.

AS head watchmaker, a high-class workman of 23 years' exp., desires to make a change. Accustomed to adjusting and rating railroad watches and other high-grade movements. Will commence at \$25 per week. Have full set of tools and can give best of ref. "D 3," care Keystone.

POSITION by first-class manufacturing jeweler on order work on all kinds of diamond work. State salary in first reply. "L 123," care Keystone.

DO you need an up-to-date optician who holds a diploma from an eye, ear, nose and throat college? If so, address Lock Box 187, Chicago.

SITUATIONS WANTED.

WATCHMAKER, jeweler and engraver, 20 years' exp.; with tools. 36 years old; good ref.; wages, \$16 per week. Address, C. E. Newell, general delivery, Chattanooga, Tenn.

DOCTOR of refraction and frame fitter, 6 years' exp. Own latest optical instruments, A1 salesman. No bad habits, good appearance. Ref. exchanged with reliable house. \$25. "B 7," care Keystone.

BY practical watchmaker and jeweler, 15 years' exp. at bench, 5 years' exp. in drug store—fill prescriptions. Do all kinds of fine watch work, etc. Own tools; 35 years old; married. Fred. Farwell, Granger, Mo.

YOUNG Delaware man, 22, wishes position as assistant in store, where he can learn hand-engraving. Prefer to be near Philadelphia; ref. best. "E 3," care Keystone.

HELP WANTED.

UNDER THIS HEADING THREE CENTS PER WORD.

A FINE workman, manufacturing jeweler and engraver. Must be first-class for position in one of the finest retail stores in the West—city of 30,000. I offer fine position. Address, stating plainly what you can do and salary expected. "R 33," care Keystone.

AT once, a first-class jeweler, optician and watchmaker. None only a person with a first-class recommendation need apply. We have our own tools and trial case. Friedman Bros., Caldwell, Ohio.

YOUNG man of good address as watchmaker. State age, salary desired, etc. H. C. Midlam, Rome, N. Y.

AT once, first-class watchmaker. State exp., ref., full particulars in first letter. Must be strictly temperate. \$15 per week; permanent position to right man. Simon Anderson, Arcata, Cal.

GOOD, all-around watchmaker, jeweler, engraver, salesman. Good town New York State. "B 3," care Keystone.

HELP WANTED.

GOOD watchmaker wanting a steady job at \$12 to \$15 week. Write full particulars in first letter, mentioning everything pertaining to the business. W. H. Evans, Red Oak, Iowa.

AT once, a good watchmaker, jeweler and fair engraver. Must be sober and reliable, and one having watchmaker's tools pref. \$15 per week. August Jarecki, Erie, Pa.

GOOD watchmaker, prefer man who can also do jewelry stone setting. Give full details as to ability, wages, etc., in first letter; permanent position. All letters answered. E. H. Schaefer, Beaver Falls, Pa.

GOOD watchmaker who repairs clocks and jewelry, engraves and act as salesman; all-around man. \$15 week; steady job. Nice town New York State. Send sample engraving, photo., etc. "B 2," care Keystone.

A FIRST-CLASS refracting optician, experienced in selling all kinds of optical goods, including mathematical instruments. Must furnish good refs. "W 135," care Keystone.

YOUNG man, at once, capable of doing clock and jewelry work, with some knowledge of watch work. State wages. Ref. from former employer. Crane Bros., Lake City, Minn.

BUYER and manager for silverware and jewelry department; one thoroughly experienced. State fully the history of your business career—where employed and how long in each place, and in what capacity; age, salary received and salary expected; also any other information that will tend to show your ability to fill said position. Address your letter to Otto Young, care The Fair, Chicago, Ill.

GOOD, all-around man as watchmaker and jeweler. Must be sober, honest and not afraid of work. Steady job for right man. Don't write if you don't want position. J. H. Brooks, Fort Smith, Ark.

WATCHMAKER, jeweler, optician; good, all-around man. Send ref. and exp.; permanent position; Feb. 1st. C. Robertson, Northport, N. Y.

PERMANENT position. \$90 to \$100 per month to an expert watchmaker and optician in best city in Texas. Send photo. and ref. Watch inspector. "L 3," care Keystone.

SURFACE grinder; A1 man permanent position. Address, with ref., salary expected and all particulars, "M 2," care Keystone.

WANTED, at once, an experienced watchmaker of sober habits. Man with knowledge of optics pref. Position permanent. Bahn Optical and Diamond Co., Austin, Texas.

HELP WANTED.

MANAGER wanted for our Pittsburg branch. Only first-class man with ability and able to take \$500.00 stock in our company considered. The T. M. Heard Optical Co., 230 Euclid Ave., Cleveland, Ohio.

GOOD watchmaker, jeweler, plain engraver, salesman. State exp., ref., full particulars, photo. in first letter; must be strictly temperate and own tools. Permanent position immediately to right man. Wages, \$10 to \$15 per week, according to ability. Box 11, Colfax, Iowa.

IMMEDIATELY, good watchmaker. D. Jenkinson, Minocqua, Wis.

YOUNG man, who can hard solder and engrave, who is desirous of advancing in a permanent position. Walter Stareck, Junction City, Kans.

JEWELRY repairer, engraver and clerk. Young man from Southern States pref. State refs. and salary. Box 573, Montgomery, Ala.

A GOOD, steady situation for a young, single man to take charge of watch repair department. Must be good in putting staffs and jewels in, also adjusting. Good salary paid. Send photo. and state age. In nice city in Pennsylvania. "F 3," care Keystone.

WANTED.

UNDER THIS HEADING THREE CENTS PER WORD.

SECOND-HAND Eaton-Eagle engraving machine. Box 253, Cluster, S. Dak.

ON easy terms, profitable jewelry business; Central States. Small amount cash. "T 2," care Keystone.

PAYING jewelry stock, Colorado or West. \$1000 cash, balance secured. J. H. Lepper, 836 Lime Street, Waterloo, Iowa.

YOUNG man with some capital to take half interest in jewelry business, town of 5000 in Central States; good location, good opening, old-established house. Have had charge of place for three years; am watchmaker, jeweler, optician and engraver. "M 5," care Keystone.

FOR SALE

One of the largest and oldest jewelry stores in Central Illinois, owing to death of late owner

L. C. GARWOOD

Will sell stock and building together, or will lease building to buyer of stock. Established since 1865, and reputation the very best. Stock and fixtures will invoice about \$14,000.00.

Address, Ex. L. C. GARWOOD ESTATE, Champaign, Ill.

HELP WANTED.

GOOD watchmaker wanting a steady job at \$12 to \$15 week. Write full particulars in first letter, mentioning everything pertaining to the business. W. H. Evans, Red Oak, Iowa.

AT once, a good watchmaker, jeweler and fair engraver. Must be sober and reliable, and one having watchmaker's tools pref. \$15 per week. August Jarecki, Erie, Pa.

GOOD watchmaker, prefer man who can also do jewelry stone setting. Give full details as to ability, wages, etc., in first letter; permanent position. All letters answered. E. H. Schaefer, Beaver Falls, Pa.

GOOD watchmaker who repairs clocks and jewelry, engraves and act as salesman; all-around man. \$15 week; steady job. Nice town New York State. Send sample engraving, photo., etc. "B 2," care Keystone.

A FIRST-CLASS refracting optician, experienced in selling all kinds of optical goods, including mathematical instruments. Must furnish good refs. "W 135," care Keystone.

YOUNG man, at once, capable of doing clock and jewelry work, with some knowledge of watch work. State wages. Ref. from former employer. Crane Bros., Lake City, Minn.

BUYER and manager for silverware and jewelry department; one thoroughly experienced. State fully the history of your business career—where employed and how long in each place, and in what capacity; age, salary received and salary expected; also any other information that will tend to show your ability to fill said position. Address your letter to Otto Young, care The Fair, Chicago, Ill.

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WATCHMAKER, jeweler, optician; good, all-around man. Send ref. and exp.; permanent position; Feb. 1st. C. Robertson, Northport, N. Y.

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WANTED, at once, an experienced watchmaker of sober habits. Man with knowledge of optics pref. Position permanent. Bahn Optical and Diamond Co., Austin, Texas.

WANTED.

PLAT rolls for cash. R. L. Deming, Garrettsville, Ohio.

VERY kind of gold and silverware, jewelry, watches, platinum. Market value paid. Sent by express or registered mail. Price not satisfactory, I will return all articles. J. L. Clark, refiner and sweeper of gold and silver (established 1870), 727 Sansom St., Philadelphia.

FOR SALE.

UNDER THIS HEADING THREE CENTS PER WORD.

OUR Pittsburg branch, price \$1500; \$500 cash and balance on reasonable time. The T. M. Heard Optical Co., 230 Euclid Ave., Cleveland, Ohio.

GOOD opportunity for man with little money, in town of 600; doing a good business, no opposition, good prices for work. Will sell fixtures, clocks and silverware; amount to about \$400; or will sell entire stock if desired. J. A. Masters, Doon, Iowa.

LARGE safe and fine regulator clock for jeweler's use. Good opening for a good workman to start up in business. For full particulars address, Alfred Johnson, Stuttgart, Ark.

WE have a limited number of our No. 2 engraving machines, which we will dispose of at a reasonable figure. As there are not many of this kind on hand, applications should be sent in early. Full particulars on receipt of a postal card from you. The Eaton & Glover Co., 87 Nassau St., New York.

A FINE business in good Iowa town of 3000; only one competitor, clean stock, fine fixtures; established 6 years; best of reasons; good prices, easy competition, best location. Don't write unless you mean business and have \$2500 to invest. "M 3," care Keystone.

DE ZENG refractometer, brand new, \$35. Box 446, Goshen, N. Y.

A RARE opportunity, old-established jewelry store; excellent trade, first-class reputation, large repairing trade; a chance seldom offered; want to retire. Address, H. N. Bolte, Atlantic City, N. J.

CASH only, jewelry store; city 30,000, good business and fine location; expenses low. "H 5," care Keystone.

THOROUGHLY equipped, up-to-date, optical establishment in Southern California; superior location, successful business, no dead stock. For full particulars address, "T 3," care Keystone.

FOR SALE.

PAYING jewelry and repair business, Massachusetts town, about \$1200. "H 6," care Keystone.

FIXTURES of only jewelry store in county seat, 2000 population. "Jeweler," Box 1, Oregon, Ill.

WELL-ESTABLISHED jewelry and optical business in Central Iowa town. Good railroad town, population 5000; large run bench work; good reason for selling. "B 6," care Keystone.

50 CENTS on the dollar buys an old-established jewelry business, fixtures new. Will invoice about \$1500; also railroad watch inspection. Must be sold by Feb. 1st; other business, reason for selling; only those meaning business need apply. Dr. E. C. Taylor, Hastings, Minn.

SET of watchmaker's tools, either all together or separate, also rail-top bench, traveling trial case and prisms, all in fine condition. For particulars address, W. E. Slater, Brookfield, N. Y.

JEWELRY business in a good Oklahoma town of 2000 people. Stock will invoice about \$1000, can be reduced to about \$700. Town is west of Oklahoma City and in good wheat belt; has two railroads and will have the third in a short time. "B 5," care Keystone.

MAIN jewelry store in town of 5000; clean, up-to-date stock; can reduce to suit; work makes one man more than hustle. Store and residence combined at \$20 per month; healthiest location in New Jersey, on Delaware. "B 4," care Keystone.

JEWELRY store in South Dakota; invoice \$700, repairs average \$55 per month, no opposition, reasons on application. "T 1," care Keystone.

\$600 CASH for jewelry business in town of 700 inhabitants. Address, E. M. Holcomb, Elizabeth, Ill.

ONE Hopkins ¾ hard lathe, 23 wire 5 wheel screw and taper chucks, tip-over rest, \$40; one Whitcomb 1½ hard lathe, 14 wire, 3 wheel screw and taper chucks and Houghton Universal chuck, \$18; Lancaster double base engraving block, \$10. Herman Sick, Weir City, Kans.

GOOD jewelry business, located in the best town in the gas belt. Will invoice about \$1600; reasons for selling, going in other business. Address, Merle Agness, Converse, Ind.

IN a growing town in Wyoming, jewelry and optical business for sale or lease at once. Write for particulars; have other business. Geo. S. Adams, Saratoga, Wyo.

BIG bargain, only store in city of 400. About \$600 worth of (all staple) stock, no novelties; eyesight failing, must sell; 18 miles to larger city, extra good territory; tools and material for sale, cash or notes taken. C. W. Hallowell, Haddon, Kans.

IN small New Hampshire city, optical business, profits \$150 per month. Complete edge-grinding plant with power connected. Price low, no fault. "F 1," care Keystone.

GOOD paying jewelry business, Ohio city 150,000; corner room, low rent; watch, clock, jewelry and optical work averages \$400 per month, will invoice \$2000, clean stock. Don't write if you haven't the money; best reasons for selling. "J 1," care Keystone.

MUST sell at once a well-established jewelry store in thriving California town of 1500. Reason for selling, failing health. Refs.: A. I. Hall & Son, 643 Market St., San Francisco, Cal. Address, "C. N.," Box 146, Santa Maria, Santa Barbara County, Cal.

\$1000 STOCK of jewelry and news; Jamestown, N. Y., on Chautauque Lake; established 8 years. News business and work bench pay a profit of \$80 to \$100 a month. John M. Cushman, 10 Main Street.

GOOD-PAYING jewelry business in Illinois. Pop. 1500. Surrounded by dairy interests. New safe and fixtures. Invoice \$2500; will reduce. Only store in town. Spot cash or no trade. "B. H.," care Frohman & Co., Cincinnati, Ohio.

WELL-ESTABLISHED jewelry business, plenty of repairing, good, clean stock and fixtures; invoice \$2500; city of 3000 in Southern Illinois. Would exchange the above for good second-hand 125 H. P. Corliss engine and boiler and 1000 to 1200-light alternating current dynamo and fixtures. All must be in good running order and not out of date; don't be afraid to answer this. "H 206," care Keystone.

JEWELER'S repair tools, nearly everything required by practical workman for job work; suitable for beginner; will sell cheap. Particulars, address, M. J. Graham, Adel, Iowa.

GROSS retino-skiometer, cost \$45, perfect condition; \$35 net, express, C. O. D. Address, "K.," 33 Kemble St., Utica, N. Y.

AN old-established jewelry and optical business in thriving railroad town in Colorado, 6000 inhabitants. Company's pay-roll \$90,000 to \$100,000 a month, 1200-odd smaller retail building; watch inspector for D. & R. G. Co. Stock invoice about \$8000, can reduce; all fresh, up-to-date stock, elaborate fine. Reasons given in first letter. Coffin, the jeweler, Salida, Colo.

A GOOD-PAYING, well-established jewelry business in Western Indiana county seat town of 2500 inhabitants. Nice, clean, up-to-date stock and fixtures. Will invoice about \$3000; can reduce stock to suit purchaser. Store and residence property if desired. Best reasons for selling. J. H. Doud, Fowler, Ind.

FOR SALE.

SNAP! 3 dozen 798 $\frac{1}{4}$ 10 K. spectacle mountings, \$17.90 a dozen pairs. "H 209," care Keystone.

ESTABLISHED jewelry in the best town in Western Kentucky. For particulars write 509 West Market, Louisville, Ky.

WALL cases, burglar-proof safe, benches, tools and material; also fine lot of trays, spectacle cabinet and lenses. A. L. Seidman, Shelby, Ohio.

A RARE chance for small capital. Good-paying jewelry business, about \$1500. Population 800. Good run bench work. Light competition. Will sell at once for cash only. Want to go to school. Write if you mean business. O. L. Morris, Lineville, Iowa.

A NICE, small town jewelry business, rich farming country. J. L. Gueller, Dorchester, Nebr.

RARE opportunity for bright watchmaker or jeweler, to step in well-paying, long-established and fine-located corner jewelry store in New York City; yearly rent \$900. With or without stock. Landau, 238 Columbus Ave.

OPTICAL office in bustling city of 18,000. Must be sold at once to dissolve partnership, cheap. C. L. Doyle & Co., Bradford, Pa.

I HAVE an ideal bargain for a watchmaker. Business established 18 years; 3500 population; failing health reasons for the change; will sell one-half interest, or entire stock. Further particulars inquire of C. H. Phelps, Birmingham, N. Dak.

WELL-ESTABLISHED optical business in best town in State. "M 4," care Keystone.

IN Iowa, county seat of 3000. The leading jewelry business; invoice about \$1800; cash business in 1901, \$4300; low rent, everything modern. This will bear investigation; poor health. Box 744, Denison, Iowa.

THE leading jewelry stock and fixtures in the most beautiful city in Southern Illinois; pop. 5000, manufacturing industries, water works and electric lights. Reason for selling, death of proprietor and must be sold. This is a bargain. If you want a good business, write to J. B. Conner, Metropolis, Ill.

FINE opening for good jeweler in live Iowa county seat. Must sell quick. "L 125," care Keystone.

WELL-ESTABLISHED jewelry and optical business. Best location, fine store and window; rent, \$40 per month; heat and water. Business last year, \$12,000; bench work \$40 weekly. Largest optical trade in city. Stock now about \$6000; can reduce. Up-to-date stock and fixtures. For particulars address, "Jeweler," No. 35 Chenango Street, Binghamton, N. Y.

A WELL-ESTABLISHED and well-known jewelry business; fine trade and bench work. Best location in growing mining town. Will bear close investigation. Established 15 years. Proprietor needs a rest. Carl Adler, Baker City, Oregon.

ONLY jewelry store in town of 5000, in one of the best towns in the anthracite coal region of Pennsylvania, old-established stand, good place for a practical man; stock and fixtures about \$4000, can be reduced; reasons for selling, other business. "L 124," care Keystone.

DIEBOLD burglar-proof safe, inside anti-dynamite-proof door, 5 ft. high, 3 ft. square, just as good as new; never been moved, cost \$400. Best offer takes it. B. G. Hough, Livermore, Ia.

FOR SALE OR EXCHANGE.

UNDER THIS HEADING THREE CENTS PER WORD.

CALIFORNIA ranch, 32 acres, oranges, lemons and alfalfa, in famous Sweetwater Valley, for jewelry or optical business. For particulars address, A. J. Santee, 1629 E St., San Diego.

925-ACRE farm in Owen County, Ind.; good 200 buildings, 90 acres timber; \$1600 income. Price, \$25 per acre. Will exchange for jewelry business. W. T. Smith, Union City, Ind.

A WALL case, 10 feet long, 10 high; cupboard A and drawers in base. Cost \$85. A three-jar fine regulator, 10 feet high, 3 feet wide. Cost \$125. Will trade either for an ophthalmometer. J. H. Boyer, Frankfort, Ind.

HALF horse-power electric motor. H. L. Hall, Muncie, Ind.

GENEVA lathe, working eye, watches for trial case, tools, or what have you? L. Turrell, Holland, Mich.

REGINA tune sheets to exchange, 27 inches and 15 $\frac{1}{2}$ inches. Cy. Shigley, Hart, Mich.

I HAVE 2 opticians' trial cases, one an Audemare the other Geneva Co. Will sell one at bargain or exchange for grandfather clock in good condition. Also Columbia graphophone, also fine oak chest to hold flatware, 56 pieces. "Jeweler," 72 North Main St., Providence, R. I.

CHEAP, 1 electro-plating outfit complete. Lathe and polishing tools new and in good order. Wm. I. Waldron, Medaryville, Ind.

SPECIAL NOTICES.

UNDER THIS HEADING THREE CENTS PER WORD.

DETAIL jewelers should keep Wells' ring adjusters. They are profitable as crystals, easily fitted and help make sales.

SOLE jewels, American-made. Can follow any instruction on your part as to the size of holes. W. C. Bonney, Keokuk, Iowa.

BUSINESS opportunity. To the right man who can invest \$5000, a chance will be given to take charge of a department in a wholesale and manufacturing business. Established 20 years and on a discount basis. Earning large dividends. Must be a man of good character and business ability. One with a knowledge of optics pref. Address, "C 2," care Keystone.

REMEMBER Wells' Ring Adjusters.

HOLLER jewels, 25 cents a dozen. W. C. Bonney, Keokuk, Iowa.

OUR \$25.00 course, with highest diploma, for \$10.00 for a short time, to a limited number. Write to-day for descriptive free circular. The National College of Optics, Incorporated, Cedar Rapids, Iowa.

WE can offer a special opportunity to a young man of natural ability who can give bond to remain with us 2 years. No charge for tuition to right party with highest refs. G. D. Parsons & Son, suite 45, 1 South Charles, Baltimore, Md.

I HAVE been with the very best watch and chronometer makers, oculists, opticians and engravers of the old and the new world, and I am prepared and ready to impart this knowledge to you, and it is great. School is now open. W. E. A. Woodcock, Winona, Minnesota.

AMERICAN-MADE balance staffs, 7 jewel grade. \$100; 15 jewel grade, \$1.25 per dozen. W. C. Bonney, Keokuk, Iowa.

BUSINESS NOTICES.

UNDER THIS HEADING THREE CENTS PER WORD.

CANTON Horological School. Repairing and adjusting. Six-second rate in three positions a specialty. Send your surplus work. P. O. box No. 27, Canton, Ohio.

YOUNG men about to take a course in horological school to write us for particulars of our new plan for getting an education. G. D. Parsons & Son, suite 47, 1 South Charles Street, Baltimore, Md.

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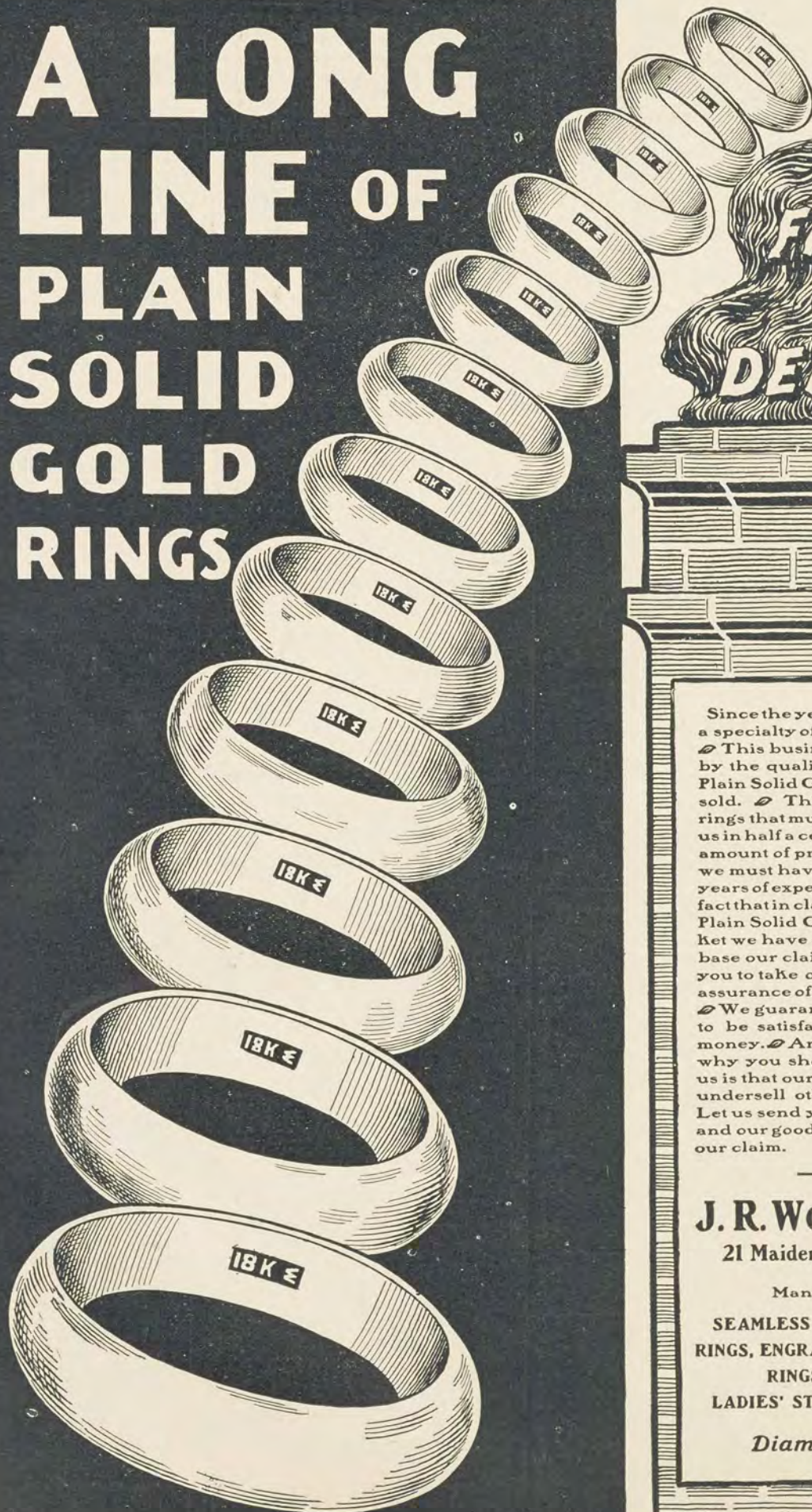
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